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# The Journal

OF THE

# American Medical Association

EDITED FOR THE ASSOCIATION UNDER THE DIRECTION OF THE BOARD OF TRUSTEES BY

MORRIS FISHBEIN, M.D.

VOLUME 100

JANUARY—JUNE, 1933

AMERICAN MEDICAL ASSOCIATION CHICAGO 1933



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VOL 100, No 1

CHICAGO, ILLINOIS

JANUARY 7, 1933

## INFARCTS OF THE KIDNEY

CHAIRMAN'S ADDRESS

J DELLINGER BARNEY, MD

AND

E ROSS MINTZ, MD

BOSTON \*

This investigation was inspired primarily by case 1. As the work progressed, it was surprising to find that the subject of infarction of the kidney has been relatively neglected. The literature is comparatively scanty, textbooks for the most part mention the subject but briefly, and many clinicians fail even to include it in the list of possible diagnoses. At the Massachusetts General Hospital this diagnosis occurs only ten or twelve times in the clinical catalogue. On investigation, none of these cases were proved by operation or at autopsy.

### REPORT OF CASES

**CASE 1—History**—A woman, aged 31, was admitted to the Massachusetts General Hospital on Sept 22, 1931, with phlebitis of the left leg of three weeks' duration and severe pain in the right flank of seven days' duration.

In 1921, 1923 and 1925 the patient was delivered of a premature infant each at seven months. There was a history of albumin in the urine through the pregnancies but it always disappeared after delivery. Following the last confinement she had phlebitis of both legs and this had recurred repeatedly ever since, first on one side and then on the other. In the interval the patient felt well and kept at her work as a stenographer. About a month before entrance she noticed a moderate degree of phlebitis in the left leg. Three weeks before entrance she noticed a dull, persistent pain in the right loin, which gradually increased in intensity up to about forty-eight hours before entrance, when it became extremely severe, requiring much morphine for its relief. There were no chills but there was a slight elevation of temperature. There was no nausea or vomiting and there were no urinary symptoms. Her local physician said later that the temperature had been about 99 F up to the time of entry, that she had a rapid pulse and that the urine was full of pus.

**Examination**—The patient was well developed and well nourished and apparently was in extreme pain. Examination of the chest gave negative results. The blood pressure was 150 systolic, 80 diastolic. The temperature was 102.4 F, the pulse rate 140 and respiration 28. The white blood count was 22,600. The red blood count was about 3,000,000. Hemoglobin was 50 per cent. Blood nitrogen was 40 mg. The urine contained a large trace of albumin with a few white blood cells and many red blood cells in the sediment.

The abdomen was full and the whole right side from the costovertebral angle and costal margin to the symphysis was extremely tender, most so in the upper quadrant. There was boardlike rigidity of the muscles, perhaps on account of this, no mass could be felt, but the impression was of a mass in the region of the right kidney. Pelvic examination showed marked tenderness in the right vault but no definite mass. As the picture suggested a pathologic condition either in or around the kidney, an acute appendicitis of the retrocecal variety or some other acute abdominal condition, a surgeon was asked to see the patient in consultation. His opinion and ours was that the condition was probably due to perinephric abscess. It was decided to wait for a time for further study and for possible improvement of the patient's condition. She was kept comfortable with morphine and given intravenous injections of dextrose solution. A roentgenogram, taken with a portable machine with the possibility of finding renal or ureteral calculi, was unsatisfactory.

**Treatment and Result**—No improvement had taken place after forty-eight hours. During this time the patient voided from 40 to 50 ounces (from 1,200 to 1,500 cc.) of urine daily. Cystoscopy was considered unwise, as the patient was too ill. Operation was performed under local procaine hydrochloride anesthesia with a preoperative diagnosis of "perinephric abscess." The tissues immediately surrounding the kidney appeared to be slightly edematous but the kidney itself seemed firm, adherent and about half again its normal size. Careful exploration around the kidney revealed no evidence of free pus. Partial decapsulation of the kidney showed the cortex to be of a dull red color and of a peculiar "dead appearance." Stripping the capsule caused no bleeding, nor did a slight tear of the cortex made accidentally by the lip of the retractor. A piece of the cortex was removed for biopsy. The wound was drained with a rubber tissue wick and closed in layers. In view of the condition found, the postoperative diagnosis was "infarct of the kidney," but it is fair to say that this diagnosis had never been considered.

Examination of the biopsy specimen by Dr H F Hartwell showed acute and complete degeneration of the tubules and glomeruli, the condition being comparable to that seen in acute mercurial poisoning.

The patient improved and was mostly free from pain for several days after operation. The temperature then again rose and her progress became unsatisfactory. Meantime examination of the chest by Dr C M Jones showed collapse of the right lung. Operation was then considered necessary and a nephrectomy was performed under gas-oxygen anesthesia. An intracapsular enucleation was done, as it seemed to be the quickest and easiest procedure under the circumstances. The kidney was about the same size as before. When the pedicle was cut across, no blood escaped from the kidney. Ligation of the vessels was done in the usual manner, but as it developed later neither clamps nor ligatures were necessary. While the kidney was being freed, the pleura was accidentally opened. This rent was immediately closed by suture.

A careful study of the kidney was made by Dr Tracy Mallory. This showed infarctions of the entire vascular structure of the kidney, both arterial and venous, with complete degeneration of practically all its tubules and glomeruli. At the time of the operation the kidney was of a dull brick red color with lighter and darker mottlings and looked like as it actually was dead tissue.

From the Urological and Pathological departments Massachusetts General Hospital.

Read before the Section on Urology at the Eighty Third Annual Session of the American Medical Association, New Orleans, May 12, 1932. Owing to lack of space this article is abbreviated here. The complete article appears in the authors' reprint.

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From the Urological and Pathological departments, Massachusetts General Hospital.

Read before the Section on Urology at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 12, 1932. Owing to lack of space this article is abbreviated here. The complete article appears in the authors' reprints.

Marked dyspnea and rapid respiration, which followed the operation, caused the patient much distress, and examination showed an extensive pneumothorax on the right side. About 2,500 cc of air was aspirated on three occasions during the next twelve hours, with some relief of the respiratory symptoms. Bronchopneumonia and empyema (confirmed roentgenographically) soon developed, and after a great deal of discomfort the patient died ten days after operation.

**Autopsy**—This showed a normal heart, normal left kidney and normal left lung. There was bronchopneumonia on the right side and also a large empyema cavity, the latter being above the lower lobe and entirely walled off from that portion of the pleura situated immediately above the diaphragm, this being smooth and normal. It would appear, therefore, that the empyema did not result from the accidental opening of the pleura and may have arisen from the trauma of the aspirations. The extent of thrombosis of the blood vessels formed the most interesting feature of this autopsy. These thromboses involved the vessels of both legs, the iliac arteries and the vena cava up to the point of entrance into it of the left renal vein. The vessels of the pelvis were mostly thrombosed, the right ovarian and right renal veins being completely occluded. On account of this extensive vascular damage, especially of the

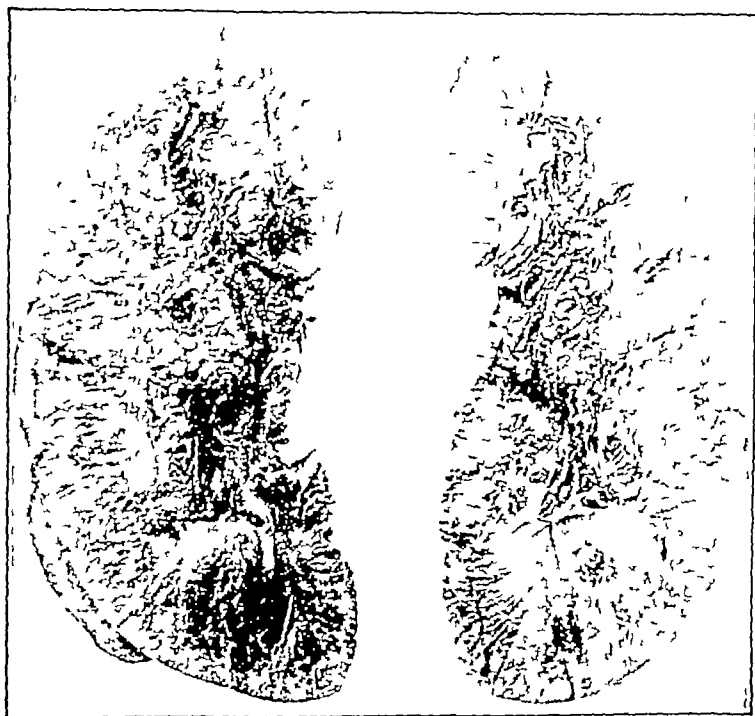


Fig 1 (case 1)—Section of totally infarcted kidney removed

vena cava, the circulation of the lower extremities and of the pelvis was being carried on chiefly by way of the left ovarian vein, which was found to be dilated almost to the size of one's thumb. The thromboses found in the vessels enumerated were of such long standing that they were canalized in many places and attached to the lumens of the vessels by strong fibrous bands. The thromboses themselves seemed to be composed of firm, fibrous tissue.

**Bacteriologic Examination**—In the blood from the right side of the heart, no organisms were found on culture, in that from the left side, *Streptococcus viridans* was found. No organisms were found in a culture from the wound. The culture from the right external iliac vein showed no growth. A culture from the empyema on the right showed hemolytic streptococcus.

**CASE 2—History**—A woman, aged 29, was admitted to the hospital on May 23, 1900. Four days previously she had had a cold with a chill, followed by pain in the right side of the chest. She vomited four or five times. Hemoptysis, cough and dyspnea were present. The temperature was 103 F, the pulse rate, 110, the respiratory rate, 28. The abdomen was normal. The urine showed a few leukocytes. The temperature, pulse and respiration dropped to normal and remained so for thirteen days, when the temperature assumed an intermittent character.

The patient was again seized with a sudden pain in the right side of the chest with a chill, the temperature rising to 104 F.

Ten days after the onset of this pain in the chest, the patient was seized with a sudden, sharp pain in the right loin, which became tender and rigid. The surgeon who saw her thought that she had either appendicitis or disease of the gallbladder.

The next day the patient still complained of pain, and vomited once. The right side of the abdomen was rigid and tender, and the lumbar and hypochondriac regions were involved. Pelvic examination gave negative results. The white count was 22,800.

**Operation and Course**—A laparotomy was performed. Nothing abnormal was found excepting a rather large right kidney.

After operation, the urine contained a few red and white cells.

The patient died nine days after operation, having failed steadily. A diagnosis was not made before death.

**Autopsy**—This showed ulcerative endocarditis involving the aortic valve, purulent meningitis and parenchymatous hemorrhage in the lungs. The left kidney was normal. The right kidney was completely infarcted.

**CASE 3—History**—A woman, aged 35, was admitted to the hospital on Jan. 20, 1910, complaining of weakness and dyspnea. The urine showed, at times, a few red cells and always a moderate number of white cells. There was no costovertebral tenderness and no pain in either loin.

Shortly after admission edema and gangrene of the legs were noted. Perhaps because of the fact that the patient soon became irrational no objective or subjective symptoms were obtained pointing to the kidney. Also, the condition of the chest obscured the picture to a certain extent.

Autopsy revealed infarction of the right kidney forming about a fifth of its volume. The left kidney was almost completely infarcted. Culture of the heart's blood showed streptococci.

**Bacteriologic Report**—A culture of the heart blood showed a moderate number of scattered small, round, raised, white colonies—streptococci.

**CASE 4—History**—A man, aged 65, was admitted to the hospital on May 7, 1912, complaining of polyuria and dyspnea of six months' duration. Six weeks previously aphasia with right hemiplegia had developed while he was asleep. This disappeared in a few days. He was seen and treated by a local physician for three weeks, with improvement.

A week prior to admission, generalized edema and anorexia with nausea and vomiting occurred.

The patient was admitted to the hospital in a state of profound uremia with generalized edema, with marked improvement under treatment.

Seventeen days after entry the patient had considerable pain with localized spasm and tenderness in the right lower quadrant, but there was no costovertebral tenderness and no masses could be felt. The urine was essentially negative. The pain was constant and severe and was not relieved by morphine. A tentative diagnosis of thrombosis of the mesenteric or renal vessels was made. The patient gradually failed and died five days later. Before death, the temperature rose to 103 F, and the urinary output diminished gradually.

**Autopsy**—Multiple infarcts of varying size were found in the left kidney. The right kidney was almost totally infarcted.

**Bacteriologic Report**—A culture of the heart blood showed no growth.

**CASE 5—History**—A man, whose age was not recorded, entered the hospital on Dec. 12, 1900. He was taken to the emergency ward on Dec. 15, 1900, with a history of having fallen off a slowly moving car with injury to the head and back. When admitted the patient was in a state of shock and was practically pulseless. Two ounces (60 cc) of bloody urine was withdrawn from the bladder, and there was a slight dulness in the right flank. A tentative diagnosis of rupture of the kidney was made.

The patient died eight days later. At autopsy a large infarct of the right kidney was found. All the vessels of the left kidney were thrombosed.

According to various authors, Traube,<sup>1</sup> writing in 1856, is credited with the report of the first proved case of infarct of the kidney. From then until 1922 several cases, singly or in groups of two or three, were described by various observers.

In 1922 there appeared a splendid article by Aschner<sup>2</sup> of New York, in which he collected from the literature and discussed in detail a group of sixteen cases. To these Aschner added the cases of two patients who were admitted to the Mount Sinai Hospital in New York, one of whom was not operated on, and therefore the case is open to question as to the correct diagnosis.

In 1924, Falcì,<sup>3</sup> working in Marion's clinic, collected twenty-two cases from the literature and discussed the subject at great length. Danhiez,<sup>4</sup> also working in Marion's clinic, reported four more cases in 1927, one of which occurred in Marion's service. These three authors, as well as many of the other reporters, have gone so thoroughly into the subject of infarction of the kidney from the point of view of pathogenesis, pathologic anatomy, symptomatology and treatment that it seems difficult to add much of value to what they have already said. On the other hand, no one has so far as we are aware, collected and analyzed any large group of cases seen at autopsy, and we have felt that such a study would add not a little to the existing knowledge of the subject, as well as enable us to arrive at certain conclusions as to diagnosis.

Accordingly, we have gone over the autopsy records at the Massachusetts General Hospital and have found 143 cases which we have studied in detail.

One might say, and indeed it is a fact, that infarcts of the kidney come more often under the eye of the internist than that of the surgeon or the urologist. Of this series, 117 patients, or 83 per cent, were admitted to the medical wards and only 22 to the surgical service. Of the latter, 6 were admitted with gangrene of one or both legs, and amputation was performed, 9 had a more or less acute abdominal condition, 3 came because of cancer, and 3 others for empyema.

Almost all of those admitted to the medical service were found to have acute or chronic heart disease, many with decompensation, others had marked arteriosclerosis as the chief cause of their illness. It is also a fact that arteriosclerosis lay at the bottom of the fatal ending of many of those entering the surgical service.

Fifty-seven and five-tenths per cent of the cases of infarct occurred in males

Somewhat to our surprise, we have found all ages included in this series. The youngest patient was a 6 year old boy, the oldest a man of 77. The great majority, however, were between 30 and 50 years of age, 24 + per cent occurred from 30 to 40 and 19 + per cent, from 40 to 50. In other words infarcts of the kidney are most commonly seen at about the prime of life.

Infarct of the kidney does not necessarily produce pyrexia, as 68 per cent of our cases were afebrile. Also it may be fairly said that when fever is present it may well be quite as often due to the lesion giving rise to the infarct, or to some intercurrent or terminal infection, as to the infarct itself.

One is not greatly aided by urinalysis. In something over 38 per cent of this series the urine was persistently

negative. In the eighty cases (61 per cent) in which the urine was not normal, it was often doubtful whether the presence of infarction of the kidney accounted for the pathologic condition found. In the first place, few of the specimens were obtained by catheter, and it is well known, of course, that without this procedure, especially in women, pus, blood or both may be found to a greater or lesser extent. Furthermore, many of the reports mentioned a "few" white or red cells, and sometimes both. In four cases, however, there was a definite statement of gross hematuria, and in these instances it would seem as if the infarct was responsible for the blood.

Few patients, in fact only 10 or 9 per cent, complained of urinary symptoms, such as frequency, difficulty or dysuria. As a matter of fact, four of the ten were those who were mentioned as having hematuria. The remaining 116, or 91 per cent, had no urinary complaints whatever.

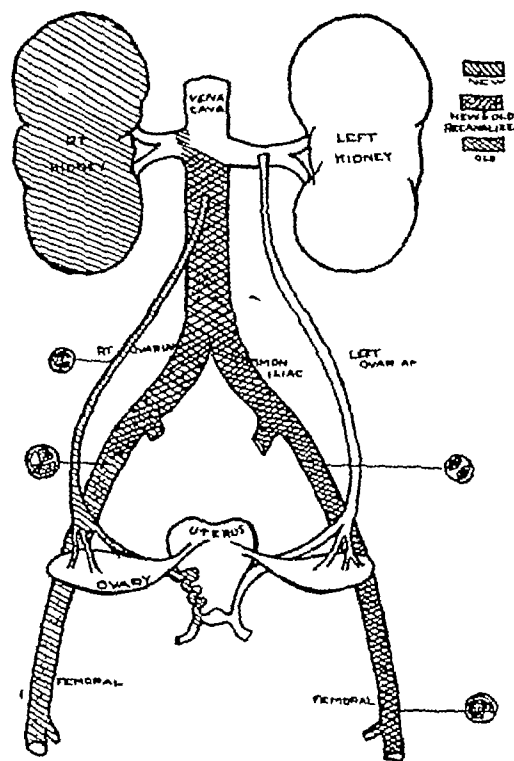


Fig 2 (case 1) —Diagram of thrombosed vessels

Nausea and vomiting are often an accompaniment of a kidney lesion, but seem to be extremely rare in cases of infarction. Here it was noted in only a little over 8 per cent. This small figure is even more surprising when we consider that many of the patients had other conditions in the abdomen or elsewhere which might well give rise to gastro-intestinal disturbances. In this connection we may say that no case was admitted with or gave a history of persistent or excessive diarrhea, or of dysentery. We mention this fact because Oppenheim<sup>7</sup> and also Virchow<sup>8</sup> gave these intestinal disturbances prominence among the causes of renal infarction. As many writers have pointed out, the intestinal

As many writers lay great stress on the symptoms of pain and tenderness and on their importance in the diagnosis of infarct of the kidney, we have studied this point rather carefully. In eighty-eight cases, or 64.7 per cent, the histories mentioned no pain or tenderness of any sort or at any time. This fact we consider

1 Traube Leber den Zusammenhang von Herz und Nieren  
krankheiten Berlin A Hirschwald 1856

2 Aschner P W Am J M Sc 164 386 (Sept.) 1922

4 Donnie. P I durol 23 481 (June) 1927

5 Oppenheim F Ztschr f Kinderh 26 192 (Aug) 1920  
6 Virchow cited by Falci



therefore, that unless there is pain, tenderness or definite urinary disorder, it will often be impossible to make the diagnosis in many cases

However if and when a patient presents symptoms such as those described in our first case, one must immediately sharpen one's wits, for the picture may be most confusing. In case 1, certain features pointed strongly to an acutely inflamed appendix lying in a retroperitoneal position with possible rupture or abscess. It was difficult, indeed, to be sure about this.

In the case of right-sided symptoms, one would naturally have to exclude in addition to appendicitis the usual list of acute abdominal or subdiaphragmatic conditions with which one is, of course familiar. The same is true of those cases occurring on the left side. We confess that in case 1, although several diagnoses were considered, infarction of the kidney was not one of them. We feel that in any case in which renal disorder is probable the possibility of infarct should at least be considered.

At the risk of repetition we wish, in closing, to summarize some of the results of this investigation. We believe that this is important not only for the sake of clarity, but also in order to emphasize certain points.

From the purely clinical point of view, renal infarction may occur in either sex and at almost any age, but especially between the thirtieth and fiftieth year. It is most often not associated with fever, urinary symptoms, nausea and vomiting or pain, and the urine is normal or essentially so in well over one third of the cases. If pain and tenderness are present, they may be indicative of a complete infarction of the kidney. On the other hand, these symptoms may so closely simulate those associated with many other acute abdominal conditions that it may be extremely difficult or even impossible to differentiate the two. We feel that it is important to keep in mind at least the possibility of a renal infarct and to remember that this suspicion will be greatly strengthened if the patient is also suffering from endocarditis, especially of the chronic fibrous type with hypertrophy and dilatation of the heart and extensive arteriosclerosis. It is also well to remember that almost any severe type of septicemia may give rise to infarcts.

It has been shown that vessels other than those supplying the kidney are not infrequently the seat of thrombi, and that in many cases a number of different portions of the vascular system may be simultaneously involved.

This study warrants the opinion that no rule can be laid down as to definite diagnostic symptoms, except to say that in many instances a complete lack of symptoms and signs pointing to the kidney may make it impossible to detect renal infarcts. That many may occur without symptoms and recover spontaneously is well shown by certain cases in this series and by the observations of others.

We also believe that it is impossible to formulate any reliable prognostic rules. As we already have remarked, it is not the renal infarction per se that kills, it is rather the endocarditis, arteriosclerosis, sepsis or phlebitis which determines not only the infarct, but even the outcome itself. In giving a prognosis, one must, therefore, keep this most important point in mind. And by the same token one must also remember that even an apparently small degree of endocarditis or of sepsis may result as disastrously as one of a more pronounced character. Generally speaking, we can say that any patient who has the conditions

favorable for the formation of infarcts of the kidney has a poor outlook.

What has been said about prognosis applies equally well to treatment. No rule can be laid down. If one is sure of one's diagnosis of renal infarction, nephrectomy may be advisable or even necessary. The infarct that cannot be diagnosed during life will probably take care of itself. Much more important is the treatment of those conditions which favor the formation of infarcts and which we have already discussed at some length. But here, also, most of these conditions are of a chronic and generally incurable character, and therefore treatment is as difficult and unavailing as an opinion of prognosis is to formulate.

## THE MATERNITY WARD OF THE GENERAL HOSPITAL

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LEIPZIG

### FOREWORD

BY DR. DeLEE

A decent respect for the two editorials<sup>1</sup> in *THE JOURNAL* and the resolutions of the Chicago and the Illinois State medical societies would be sufficient reason for presenting this rather voluminous paper, if the importance of the matter concerned did not command it.

In 1926 and again in 1927, attention was called<sup>2</sup> to the prevalence of puerperal infections in the maternity wards of general hospitals, and both architectural and administrative isolation of infected cases was recommended. In 1932, the *Ladies' Home Journal* printed a popular life of Semmelweis by de Kruif<sup>3</sup> in which the Lying-in Hospital and my convictions were mentioned and which elicited the editorials and resolutions referred to. This article is my reply.

In order to present to the profession a perfectly unbiased view of the situation, I asked Dr. Heinz Siedentopf to study the literature and write a paper for me on his objective observations. Dr. Siedentopf is privatdozent in Professor Sellheim's clinic in the University of Leipzig and is spending an exchange year at the University of Chicago. He was more than unprejudiced, he was of the opposite opinion to mine when he started his investigations and his study has convinced him of the correctness of my position. I do not have to assume responsibility for any of the statements (except those citations from my own articles) which he culled from the literature. Exact references are in every instance supplied.

### THE FACTS

BY DR. SIEDENTOPF

The science and art of obstetrics are undergoing many marked changes during the present time. The last few years brought about valuable improvements in the perfection of prenatal care, the development of

<sup>1</sup> 'Saver of Mothers,' editorial, *J. A. M. A.* 98:891 (March 12) 1932, *Obstetric Mortality*, *ibid.* 98:1378 (April 16) 1932.

<sup>2</sup> De Lee, J. B. 'The Maternity Ward of the General Hospital,' *Modern Hospital Year Book*, ed. 6, 1926, 'What Are the Special Needs of the Modern Maternity,' *Mod. Hosp.* 28:59 (March) 1927. 'How Should the Maternity be Isolated,' *ibid.* 29:65 (Sept.) 1927.

<sup>3</sup> de Kruif, Paul. *Ladies' Home Journal*, March, 1932.

pain-relieving methods during labor the better management of cesarean section

Another remarkable change is the increasing use by the public of hospitals for deliveries. This is noticeable in Europe as well as in this country. Polak<sup>4</sup> in his report for Subcommittee II of the White House Conference on Child Health and Protection, mentions it, and Ehrenfest,<sup>5</sup> in the same conference, reported that in the ten largest cities hospitalization now ranges between 56 and 85 per cent of all live births. The majority of births, however, still take place at home, 1,500,000 out of the 2,200,000 annually.

Jessen,<sup>6</sup> in his article on fifty years of puerperal fever in Basel, reports that, in 1868, 51 per cent of all deliveries in the canton of Basel-Stadt were performed in the hospital. In 1896 when a hospital was built, 29.8 per cent of all parturient women came to the hospital. In 1928, 75 per cent of all deliveries of the county were performed in the one city hospital.

Hanauer<sup>7</sup> states that in Frankfurt, Germany, in 1930, 75 per cent of all deliveries of the city were performed in hospitals.

As the result of this development, more and larger hospital opportunities for deliveries are being created all over the world. After the war, in Germany, the number of private maternity hospitals was tripled and that of the public maternity hospitals almost doubled. The number of all maternity hospitals was 94 in 1902, 217 in 1918, and 288 in 1928.

The question arises: Have these recent changes in the practice of obstetrics resulted in better welfare of mother and child, less loss of life, greater protection of health? One glance at the mortality statistics all over the world reveals that it has not. During the past years maternal mortality in many countries has increased, even if one excludes the cases of death after abortion.

Bland<sup>8</sup> writes

The trend in morbidity and mortality, according to the most recent report of the Children's Bureau, is not in the line of improvement, but rather on the decline. In 1915, the death rate from all puerperal causes was 61 per thousand live births, and in 1925 the rate is recorded as 65 per thousand.

He furthermore quotes from the 1927 report of the British Ministry of Health:

There is no reduction to report in the actual mortality rate in childbirth (from 1901 to 1926) and there is no evidence of decreased invalidity subsequently. It must be confessed that the situation is obscure and perplexing. It is cause for regret, and indeed for some concern, that there appears as yet little or no improvement in this matter. For some years past public and private endeavor has addressed itself to the issue without encouraging reward.

De Snoo<sup>9</sup> of Utrecht writes

In Berlin, in 1923, it was 3.55 per thousand, in 1924, 2.76 per thousand and in 1929, 5.5 per thousand. In England also there was an upward trend. In Holland the mortality is 2.6 to 3 per thousand. This high mortality rate of mothers and children has become alarming during the last years and efforts have been made almost everywhere, but especially in England, America and Germany, to find the cause.

<sup>4</sup> Polak, J. O. Maternal and Early Infant Care. *Am J Obst & Gynec* 21: 852 (June) 1931.

<sup>5</sup> Ehrenfest, Hugo. Factors and Causes of Fetal Newborn and Maternal Morbidity and Mortality. *Am J Obst & Gynec* 21: 867 (June) 1931.

<sup>6</sup> Jessen, E. Fünfzig Jahre Kindbettfeber in Basel 1876-1925. *Schweiz med Wchschr* 59: 1104 (Nov. 2) 1929.

<sup>7</sup> Hanauer. Statistik der Entbindungsanstalten. *Arch. f. Gynak* 110: 737 (June 24) 1932.

<sup>8</sup> Bland, P. B. Puerperal Morbidity and Mortality. *M J & Rec* 83 (Jan. 16) 1929.

<sup>9</sup> De Snoo. Die Bedeutung der Präventiven Geburtshilfe. *Monatsschr f. Geburtsh u Gynak* 91: 1 1932.

Browne<sup>10</sup> of London writes the following:

The annual report for 1930 of the chief medical officer of the Ministry of Health shows in 1911 the total puerperal mortality was 3.87 per thousand live births, in 1930 it was 4.40. From puerperal sepsis the death rate in 1911 was 1.43 per thousand. In 1930 it was 1.92. That the mortality from eclampsia has not declined is shown by a study of the returns of the Registrar-General.

The British Committee on Maternal Mortality and Morbidity<sup>10a</sup> in 1932 made a table from the official returns from Stockholm, which shows that the average maternal death rate per thousand live births for the ten years 1921-1930 was 5.1 (sepsis, 3.8, other causes, 1.3), and for the year 1930 it was 8.6 (sepsis, 7.2, other causes, 1.4). Moreover, it shows a very decided rise in the last five years.

Polak writes that, in contrast to the reduction of female mortality, the result of preventive medicine in the last fifty years, the mortality from conditions incident to pregnancy and childbirth in England, Wales and the United States has shown very little decline, and the mortality from sepsis has remained stationary for the last fifteen years.

In a report on maternal mortality in New York, DePorte<sup>11</sup> writes:

The average annual death rate in 1915-1920, exclusive of 1918 (the year of the great influenza epidemic when mortality from puerperal causes was abnormally high), was 56.8 per ten thousand total births, the average annual rate in 1921-1925 was exactly the same—56.8. Thus the situation in the state during the two successive five-year intervals did not change at all.

Comparing maternal mortality with the other causes of death, DePorte says:

It is because of this added hazard that the death rates among married women under 35 years are higher than among either single women or married men of the same age.

Thus, the profession of being a mother today is more dangerous than the average masculine profession, with all its risks.

Furthermore, the increasing preference of the hospital as a place of delivery, one of the most marked changes that has taken place during the last few years and is growing, seems not only not to have bettered the results but seems actually to have made them worse. Not a few authors state that this development is increasing the maternal mortality and morbidity, as is shown by the following excerpts from the literature.

A very startling paper was published for the Scottish Board of Health by Kinloch, Smith and Stephen<sup>12</sup> in 1928. It dealt with the investigation of 252 maternal deaths that occurred during the ten years from 1918 to 1927 in Aberdeen. They viewed their results with consternation.

The comparative maternal death rates from all causes and for the separate causes of death in the practices of doctor, midwife and institution have been analyzed, the factor of selection being eliminated by transferring the cases back to the original doctor or midwife in charge of the case, and it has been found that the death rate per thousand maternity cases is 2.8 in the practice of the midwives, 6.9 in the practice of doctors and 14.9 in inpatient institutional practice.

<sup>10</sup> Browne, F. J. Antenatal Care and Maternal Mortality. *Lancet* 2: 1 (July 2) 1932.

<sup>10a</sup> Final Report of the Departmental Committee on Maternal Mortality and Morbidity. Ministry of Health, London, 1932.

<sup>11</sup> DePorte. Maternal Mortality and Stillbirths in New York State 1915-1925. New York State Department of Health, 1928.

<sup>12</sup> Kinloch, J. P., Smith, J. and Stephen, J. A. Maternal Mortality. Edinburgh His Majesty's Stat. Off. 1928.



here is reason to believe that the high incidence of puerperal sepsis in maternity institutions in Aberdeen is due to contagion. The abnormally high death rate in public institutions is due in part to their selection of difficult and complicated cases.

These observations are the more surprising because the investigators found on the other hand that the cleanliness, size, and crowdedness of the house have no significant effect on puerperal mortality. This would mean that home delivery, even under the poorest conditions is safer than hospital delivery—indeed, an alarming statement. Both McCord<sup>13</sup> and Julius Levy<sup>14</sup> prove that women are safer in the hands of midwives than when cared for by physicians. Dublin<sup>15</sup> reports 1,000 cases delivered by nurse-midwives among the mountain folk of Kentucky, with no death from sepsis. He also reported on 2,982 women delivered in New York City hospitals and 5,183 women delivered in their homes, with mortalities of 5.3 and 1.9 per thousand, respectively, commenting thus: "There is any amount of evidence now, I believe, to indicate that there is a serious risk in the usual maternity ward which is absent in the usual confinement at home." Dublin is a great statistical authority.

In the preface to Macgregor's paper on "Puerperal Infection in Maternity Hospitals," Kinloch writes:

There is reason to believe that the results as recorded in the Aberdeen and Glasgow reports do not differ appreciably from the results obtained in other centers. If this be so, then it is scarcely possible to exaggerate the gravity of the indictments against the state of institutional midwifery in this country.

Seeing these figures, one almost wonders whether the hospitalization of normal labor cases should not be abandoned (as was recommended by Bumm<sup>16</sup>), leaving the normal deliveries to private physicians or even midwives, and reserving the hospital, with its better equipment, for complicated cases only. Indeed, some other very well known men have made this or similar suggestions.

Kinloch, Smith and Stephen arrive at the following conclusions:

The evidence supports the view that the development of a new midwifery organization in which midwives conduct all normal deliveries, and in which doctors provide the antenatal services and deal with obstetrical complications, will result in a significant reduction in puerperal mortality.

Young<sup>17</sup> says:

The well established risks of contact infection in hospitals call for care in the extension of the hospital system of maternity service.

De Snoo of Utrecht writes:

The probability of a spontaneous labor is smaller in a hospital than in the home, and it is even possible that for this reason the disadvantages of a hospital delivery are larger than the advantages.

As a prophylactic method against infection he recommends a "restriction of hospital deliveries."

In a private communication to Dr. DeLee, Dr. J. B. Dawson of Dunedin, New Zealand, states that in 1930 the maternity hospitals had a maternal mortality of 2.78 per thousand while the "mixed hospitals" showed 4.3

per thousand. The public hospitals (without special lying-in wards) and private practice showed 4.5.

These statements certainly are astonishing. However, if we would really adopt the opinion that the increasing hospitalization of parturient women is not an improvement, is it a development which depends at all on us obstetricians or the medical profession? Could we, even if we would, stop this development and bring back the times when every married woman had her baby in her home? We could not! This rapidly increasing demand for hospitalization of delivery cases, which is found all over the world, does not come alone from the medical profession but is a demand of the public itself. The reasons seem to be multiple. Poor economic conditions with insufficient housing explain the conditions in Germany, because there the parturient woman may have her baby in a good public hospital without any charge, while at home delivery entails all kinds of trouble and expenses. In America it seems that the comforts of the hospital compete with the disadvantages of apartments and hotels, which explains the preference for the hospital. Furthermore, here also, with living conditions getting worse, many women are forced to abandon the expensive private physician and to choose cheaper or even charity hospitals. Besides this, the hospital delivery has great advantages over the delivery in the private home: better equipment, experienced assistants, and immediate help in case of emergency. Therefore, even if considered desirable, an attempt to stem the flow of patients to the maternities would fail, and, realizing the dangers lurking in hospitals, we should do everything to improve conditions of the institutional delivery, so that it will turn out to be safer than home delivery, and give the mothers, who come to us with confidence, all the best we can create.

To be able to make such improvements we must first determine what is wrong with the hospital delivery. Why do more women die in the well equipped, fully staffed hospitals than die in the primitive home?

Some authors claim that polypragmatism, which is invited by the elusive security of modern surgical and anesthetic methods, is the cause for the general high mortality and morbidity.

Flint,<sup>18</sup> in his article concerning the responsibility of the medical profession in further reducing maternal mortality, writes: "Less operating, more conservatism is, in my opinion, the outstanding remedy for the present high mortality." Rock<sup>19</sup> declaims against meddling some midwifery. He writes:

The first commanding detail that obtrudes itself on analysis of what we consider preventable deaths, is that 71 per cent of them followed operative deliveries. We must recognize that there is a direct causal relationship between a high operative incidence and our high maternal mortality.

Polak, in his White House Conference report, says:

In New York State the gain which has been made by prenatal care, antenatal propaganda, better, cleaner and more conservative obstetrics in the rural districts, is offset in the hospitals of the urban areas by a great increase in operative deliveries and the complications which follow.

Ehrenfest writes:

Artificial delivery is becoming increasingly frequent, especially in hospital practice, chiefly as the result of four factors: (1) a sense of safety, often false, (2) the almost universal use of

<sup>13</sup> McCord, J. R. The Education of Midwives, *Am J Obst & Gynec* 21: 837 (June) 1931.

<sup>14</sup> Levy, Julius. Reports of the Health Department, Newark, N. J.

<sup>15</sup> Dublin, L. T. Metropolitan Life Insurance Company letter, May 4, 1932.

<sup>16</sup> Bumm, Ernst. *Arch f Gynak* 97: 628 (July) 1912, *Grundriss der Geburtshilfe*, Berlin 1922.

<sup>17</sup> Young, cited by Kinloch, Smith and Stephen.

<sup>18</sup> Flint, Austin. Responsibility of the Medical Profession in Further Reducing Maternal Mortality, *Am J Obst & Gynec* 9: 864 (June), 1925.

<sup>19</sup> Rock, John. Maternal Mortality: What Must Be Done About It. *New England J Med* 205: 899 (Nov. 5) 1931.

anesthetics in response to the demands of the patients, (3) an exaggerated idea of the value of the infant's life and of the value of operative delivery in conserving this life, (4) the often false idea that artificial delivery is easier on the mother, incidentally an idea which complies with the present demand of women for a short labor.

Piper<sup>20</sup> directly blames the polypragmatism that is conducted in the larger hospitals for the fact that while "rural obstetrics has long been regarded as poor obstetrics, a study reveals that the rural status shows a better record in every instance than that given for the urban."

His opinions are supported by the figures that are published about maternal mortality in New York State by DePorte. They show that "in 1921-1925 in the urban part of the state the mortality from puerperal septicemia was 13 per cent higher than in the preceding five years and mortality from all other puerperal causes increased 86 per cent, whereas in rural New York mortality from puerperal septicemia declined 23.9 per cent and mortality from all other puerperal causes, 27.3 per cent."

"Meddlesome midwifery is the fault of the physician and should be checked by better obstetric training."

It is, however, not the only danger that is connected with hospital deliveries. The fearful enemy puerperal sepsis, which endangered the lives of the mothers in preantiseptic times and brought about in the hospitals mortality rates as high as 33 per cent, is still present today. Six thousand women die annually in the United States from puerperal infection and there has been no decrease in recent years, as may be seen in the United States Census Reports and those of individual states.

As far as Germany is concerned, Sigwart<sup>21</sup> gives statistics of mortality from puerperal fever. In 1901 there were 146 maternal deaths for every 10,000 babies. In 1916 there were 222, and in 1921 there were 283. While this increase is certainly due in part to the increase of criminal abortions, other data given by him reveal that there is also an increase of septic deaths after delivery at term. In 1911 the mortality in Berlin from puerperal fever was 212 for every 10,000 births. In 1917 it was 159, in 1921, 233, and in 1922, 230. While these statistics show marked changes from year to year, they reveal the highest death rate in the later years—certainly no sign of improvement.

The death rate from puerperal sepsis is actually higher than reported in the various countries, since many women die from indirect or later effects of infection which are not classified properly or in which the connection is hidden by time. Pulmonary embolism, abscess, endocarditis (leading to organic heart disease) and surgical kidney are examples.

Goodall<sup>22</sup> in his book on puerperal infection, writes "There is no such case as aseptic thrombophlebitis, or aseptic febrile conditions in the puerperium." Later he states "Eighty per cent of the cases of puerperal infection are symptom free. The other 20 per cent have a varied symptomatology."

There is no question that delivery in the general hospital carries a much higher danger of contagion than delivery in the home. Ehrenfest says that "the increasing hospitalization of parturient women has many decided advantages but as well such disadvantages as

exposure to cross infection." Goodall believes "the hand is undoubtedly the commonest source of infection," and Gibberd<sup>23</sup> points to "the seasonal relationship between deaths from puerperal sepsis and throat infection" and says that "the association of epidemics of sepsis in institutions with outbreaks of streptococcal infection amongst the personnel has been noted in many instances." Kinloch, Smith and Stephen also incriminate throat infection, and the existence of "carriers" seems about proved.

As far as auto-infection is concerned, their observations support Young's view that "auto-infection as a primary factor plays a quite unimportant part in the death rate from sepsis and that in our search for essential causes we must address ourselves to the remaining factors of contagion and trauma." Moreover, it would be difficult to explain why auto-infection should occur so much more frequently in hospital cases than in cases delivered at home and in the practice of midwives. Therefore we will not go into detail concerning the question of auto-infection, which has created a vast literature, because it would not bring about any new explanations as to why hospitals sometimes have a higher mortality than deliveries in the home.

Air infection has usually been given a minor role or no role at all in the causation of epidemics of puerperal fever, but lately it is beginning to be thought that it may have some real bearing after all.

Robinson and Cuttle<sup>24</sup> describe a small epidemic of puerperal fever in a hospital and admit the probability of air-borne infection, the puerperal woman in her own home running little risk.

DeLee, after decrying the stepmotherly treatment that the maternity ward of the average general hospital receives, makes this devastating statement:

There is one evil, however, that surpasses all these and that makes me declare that the maternity ward in the general hospital of today is a dangerous place for a woman to have a baby. The peril lies in the infective influences which emanate from the wards devoted to medicine, surgery, gynecology, pediatrics, the laboratories and the autopsy room.

He demands for the maternity ward equality with the surgical, and says:

In addition to all this the maternity should be in a separate, detached building with its own laundry, kitchen, and quarters for help. In large institutions the problem is easy of solution, for smaller hospitals the moral responsibility may be met by building a maternity cottage adjacent to the main building. The flexibility of the maternity should be such that one never has to permit the puerperae to overflow into the general wards of the hospital.

Cases of infection develop in every maternity no matter how carefully conducted, and, if kept in the building, they are a menace as great, if not greater, than are such cases in the surgical ward. Such infections are to be transferred to the main building to a special ward set aside for and properly adapted to the handling of all septic cases—those from the surgical and medical wards as well as those from the maternity, or they may be taken to a detached isolation pavilion.

That DeLee's demands did not originate from utopianism and fanaticism but from a good sound knowledge of human nature and of hospital management is clear from his following statement:

I will concede that if the maternity ward in the general hospital were on a completely separated floor, and that if the doctors, students, nurses, orderlies, laundrymen and maids

<sup>20</sup> Piper W. A. Rural Obstetrics and a Comparative Study of Its Relation to Puerperal Mortality Statistics. Minnesota Med J 489 (Sept.) 1926.

<sup>21</sup> Sigwart in Hüllan-Scitz. Handbuch der Biologie und Pathologie des Weibes 8 part 1 p. 469.

<sup>22</sup> Goodall. Puerperal Infection. Montreal 1932.

<sup>23</sup> Gibberd G. F. Streptococcal Puerperal Sepsis. Guy's Hosp Rep S1 29 (Jan.) 1931.

<sup>24</sup> Robinson A. L. and Cuttle G. E. Infectious Puerperal Fever, Lancet 1 67 (Jan 11) 1930.

always carried out an intelligent aseptic technic the equivalent of that practiced in the best surgical operating rooms, while even then it would not be possible to insist it is perfectly safe to treat maternity cases under the same roof with surgical and medical cases, the element of danger would be reduced to such a minimum that the public would be willing to accept it against the expense and trouble of carrying out ideals. Since, however, we doctors should be satisfied with nothing less than perfection, it behooves us to strive with might and main for the ideal.

These excerpts come from articles published during 1926 and 1927 in the *Modern Hospital* and its year-book and were supported by an array of facts to which reference will be made later on. They evoked a storm of criticism to which Dr DeLee replied through that magazine. This polemic Dr DeLee will rehearse briefly in his closing remarks.

I shall now investigate the grounds on which DeLee made his amazing declaration and then his demand for isolation of infected cases, beginning with a quotation from his 1926 paper.

The menace of the general wards of the hospital to the maternity was brought home to me thirty-three years ago when I had my first experience with an epidemic of puerperal infection. In rapid succession four women developed septicemia, of these, one died and one had pelvic abscess. In addition to the four, several milder cases ran short courses.

In common with other surgeons I hoped that by refining the aseptic technic, by using rubber gloves, by keeping the puerperae apart from the general medical and surgical cases, we could prevent the occasional infection and certainly avert epidemics.

This hope and these endeavors have proved vain. Within the last few years the frequency of individual cases of puerperal infection has grown and the number of serious epidemics has increased in dismaying proportions. I have personal knowledge of the following instances, all occurring within the last four years and all in good hospitals.

General class A hospital, maternity ward all on one floor, ten cases of puerperal infection, six severe, three deaths.

General hospital, maternity patients on same floor as surgical, five mothers seriously ill, six babies (one twin), three mothers and three babies died of infection. (This is only part of the story, the rest was concealed.)

General hospital, maternity ward on one floor of a wing, thirty-six cases, two died, two transferred as scarlet fever. (Story incomplete.)

General hospital, maternity part of floor with medical and children's cases, fourteen cases, three deaths.

Class A hospital, state of New York, fifteen cases streptococcus puerperal infection and four of diphtheria, three deaths.

Class A hospital, Illinois, five cases puerperal streptococcus bacteremia within three weeks. All died.

Class B hospital, Illinois, superintendent reports a severe epidemic of puerperal septicemia but withheld details.

General class A hospital, in Boston, twenty to thirty cases of puerperal fever, six deaths.

Few epidemics are reported in the literature. Those hospitals publishing their cases are entitled to praise. Tinker of Ithaca, in a paper on skin disinfection, mentions an outbreak of Streptococcus hemolyticus infection in the maternity ward, with two deaths.

Dafoe<sup>25</sup> gives an account of eight fatal cases of puerperal sepsis occurring in three weeks in the maternity ward of the Toronto General Hospital, Toronto, Ont.

Morris<sup>26</sup> of Australia reports the closing of a hospital because of serious fulminating puerperal septicemia, which was traced to the gynecologic patients, on another floor, and calls attention to the conspicuously low sepsis rate of the extern cases.

Bourne<sup>27</sup> of London six cases, four deaths. He says, "It seemed that the presence of the infecting case within the radius of the ordinary traffic of the wards was sufficient to disseminate serious and fatal infection." The "infecting case" was not examined and there was no connection possible through the nurses.

Vogt<sup>28</sup> says that in a German maternity it was necessary, during the war, to receive wounded soldiers and at once infections appeared among the puerperae.

In June, 1925, a doctor wrote me for advice as to the cure of puerperal peritonitis, which had been prevalent in the maternity ward, afflicting clean cases delivered spontaneously without vaginal examinations. The last month three women had died.

Many years ago my attention was drawn to the dangers of general hospitals for the babies.

General, class A hospital, maternity ward on one floor of wing used for medical and children's diseases, 75 per cent of the babies had temperature ranging from 101 to 103, and so regularly that the head of the pediatric department called the condition "physiologic"! One of my babies died of erysipelas, one of my clean deliveries developed a fatal streptococcus septicemia, another died of pyemia, in this institution.

The chief obstetrician of one institution complains of the frequency of boils and pustular eruptions and pyemia among the infants in his ward. (This hospital in May, 1927, had two deaths from sepsis.)

General hospital, maternity ward at end of general ward floor, shut off by two doors with vestibule between. Epidemic of septicemia carried off ten new-born babies, ward closed, disinfected and painted, reopened, and within three months another epidemic, precisely similar, killed nine babies.

The mothers are exposed to other risks, such as breast abscess. I shall mention only a few of my experiences.

General class A hospital, obstetric patients in private rooms mixed with surgical cases on the operating room floor, five of my private patients had breast abscesses at one time, same hospital, eight years later, an epidemic of breast abscesses, more than six cases.

Special maternity hospital without means of isolating cases other than so-called "administrative", fifteen breast abscesses in spite of most rigorous methods of prevention. In the last nine years proper architectural and administrative isolation being provided, breast abscesses have become very rare.

To these I may add the following of latest date.

General class A hospital, 1932, five infections, four deaths.

General class A hospital, twelve cases of puerperal fever, four deaths.

General class A hospital, 1932, five cases of infection.

Allan and Bryce<sup>29</sup> describe an outbreak of sepsis which concerned even the babies, in a small Australian hospital registered for general and obstetric patients.

Macgregor<sup>30</sup> of Glasgow reports an outbreak of sepsis in six cases which occurred in the maternity section of a large general hospital during April and May 1929. Furthermore, he gives details of an extensive outbreak of infection in the maternity block of a large general hospital. Between the months of February and June, 1928, 289 women were confined, of whom 54 (almost 19 per cent) were considered to have contracted puerperal fever, with 10 deaths. The latter epidemic proves the enormous difficulty in cleaning a hospital after it is once infected. Even though the one under discussion was closed for about two weeks, the epidemic continued after the reopening.

27 Bourne, A. W. *Recent Advances in Obstetrics*, Philadelphia P. Blakiston's Son & Co., 1926, p. 154.

28 Vogt. *Zentralbl. f. Gynäk.* 51, April 23, 1927.

29 Allan, R. M. and Bryce, L. M. A Report on an Epidemic of Septic Infection Occurring in a Maternity Hospital, *M. J. Australia* 1: 390 (March 31) 1928.

30 Macgregor, A. S. M. Observations on Puerperal Sepsis from the Epidemiological Standpoint, *Glasgow M. J.* 112: 252 (Nov.) 1929.

25 Dafoe, W. A. *Edinburgh M. J. (Tr. Edinburgh Obst. Soc.)* 32: 133 (Sept.) 1925.  
26 Morris, E. S. *M. J. Australia* 2: 301 (Sept. 12) 1925.

Macgregor however, reports also an outbreak of acute sepsis in a maternity cottage hospital, which he calls long established and well conducted. Ten cases of puerperal sepsis with four deaths and two cases of erysipelas with one death occurred. He states that an experience of this kind is unique in the history of this institution and may be explained by the extremely virulent nature of the infection which was introduced by a patient who was considered to have an acute bronchitis. Even though Macgregor says that the means and procedure for isolation were satisfactory, they apparently were not sufficient in this case. Since there was only "an isolation room" and apparently no special septic staff this hospital would not meet the demands of DeLee for an ideal maternity hospital.

Watson<sup>31</sup> published a report of the epidemic at Sloane Hospital for Women New York, in 1927, twenty-five cases with nine deaths.

In 1932, Kellogg<sup>32</sup> of Boston, describing two epidemics of puerperal infection, states that nine others have occurred in seven hospitals in Boston in twenty years, only one without fatalities.

From St Paul, in 1932, come reports of two epidemics, with six and four deaths, respectively, and from New York one and Connecticut one, within the month.

It is known that in preantiseptic times the mortality in all maternity houses was much higher than that of the home deliveries, but especially high mortality rates were found when the parturients were under the same roof with other patients, for instance, wounded soldiers.<sup>21</sup>

A search through the literature discloses numerous authors who believe, like DeLee, that the maternity wards of the general hospital are a danger and that the special maternity hospital is the only ideal goal.

Flint writes

In special hospitals, however, such mortality (from infection) has almost disappeared. The morbidity from milder grades of infection is about five times as frequent as the deaths and how many women are left incurable invalids it is impossible to estimate. I believe that infection occurs most frequently in private practice and in general hospitals with a maternity service and least frequently in special hospitals.

Polak in his report for the White House Conference on Child Health and Protection, points out that the maternal mortality rate in special hospitals is lower than the general mortality rate of the locality and of the general hospital with segregated maternity wards.

Bill<sup>33</sup> says

Hospitalization of maternity patients has increased to a remarkable extent and it is encouraging to note the greatly increased number of specialized maternity hospitals in this country. The advantages of the isolated maternity pavilion in stimulating the advance of maternity welfare, in the training of obstetricians and in the prevention of infections have been definitely proven. The reduction of the most outstanding cause of maternal mortality in this country, infection, will come through a better realization of the importance of the principle upon which the isolated maternity pavilion is based, namely, that there should be no possible communication between it and any sources of infection. This is an old law but one continually broken both by general practitioners who continue to go from infected cases to confinements and in hospitals where the maternity ward is so located and the medical and nursing staffs so organized that transmission of infection can scarcely be avoided.

In May, 1925, at Washington, the maternal welfare committee of the American Gynecological Society, under the chairmanship of Prof F L Adair, presented a resolution which was adopted unanimously. This committee has been functioning several years, its object being to find out why the mortality continues so high among American mothers. As one potent cause of death, the committee has found puerperal infection in general hospitals. The resolution, as signed by Dr George Kosmak, New York, Dr Henry Schwarz, St Louis, Dr George Clark Mosher, Kansas City, Dr W C Danforth, Evanston, Ill, Dr Frank W Lynch, San Francisco, Dr Robert L De Normandie, Boston, Dr Ralph W Lobenstine, New York, and Dr Fred L Adair, Minneapolis, is as follows:

It is resolved that as a measure to promote better care of pregnant women, with a corresponding reduction of maternal and infant morbidity and mortality due to septic infection in hospital practice, the Joint Committee on Maternal Welfare advocates a detached and separate maternity service, with its own personnel, in all general hospitals admitting pregnancy cases, and also recommends as an ultimate ideal that physically separated buildings be provided for this purpose when practical.

At the 1925 meeting of the Hospital Association of the State of Illinois, H L Fritschel<sup>34</sup> of Milwaukee made the recommendation "that the maternity hospital should be a separate unit distinct from the general hospital."

Dr Franklin H Martin,<sup>34</sup> director general of the American College of Surgeons, after studying the reports on hospitals in the United States, declared that in his opinion the general hospital carries dangers to the puerperal patient, and he advised the strictest isolation of the maternity ward, when practicable, in existing hospitals, and that architectural isolation, preferably in a separate unit, be provided in new hospitals.

Murray's<sup>35</sup> report from the Princess Mary Maternity Hospital, Newcastle on Tyne, is significant. "In this hospital outbreaks of pyrexia and definite sepsis occurring from time to time among the 'clean' cases, caused much anxiety and demanded investigation." The complete "isolation" demanded by the result of this investigation resulted in "improvement at once."

Watson asks for a self-contained isolation unit in every maternity hospital.

Robinson and Cuttle say "All infected puerperal women should be isolated as strictly as patients with other infectious fevers."

Young goes even further than DeLee. He makes the suggestion that

the "clean" or "booked" case, untouched prior to admission should have its own institution, and that the "suspected" case, i.e. that subjected to certain kinds of interference before admission, should be provided for in a different institution.

Murray<sup>36</sup> writes

The following would appear to be the minimum requirements of a modern maternity hospital: (1) an admission room for preliminary classification, (2) examination rooms and wards for (a) clean, (b) suspect cases, (c) cases of genital sepsis, (d) cases of extragenital sepsis. Each of these four units should have its own labor ward and nursing staff.

Stoeckel<sup>37</sup> of Berlin insists, as a minimum for even the smallest maternity, that healthy and infected

<sup>31</sup> Watson B P. An Outbreak of Puerperal Sepsis in New York City. *Am J Obst & Gynec*. 16:157 (Aug) 1928.

<sup>32</sup> Kellogg F S. Read before the Association of Obstetricians and Gynecologists at French Lick, Ind. in September 1932.

<sup>33</sup> Bill. President's Address. The Newer Obstetrics read before the American Association of Obstetricians, Gynecologists and Abdominal Surgeons in September 1931.

<sup>34</sup> Cited by DeLee.

<sup>35</sup> Murray E F. Puerperal Sepsis, *Brit M J* 1:814 (May 3) 1930.

<sup>36</sup> Murray E F. Puerperal Sepsis. *Brit M J* 2:514 (Sept 27) 1930.

<sup>37</sup> Stoeckel W. Mindestforderungen für Einrichtung von Entbindungsanstalten. *Deutsche med. Wchnschr* 56:255 (Feb 14) 208 (Feb 21) 1930.

patients during delivery and in the puerperium be treated separately

De Snoo of Utrecht writes

The most dangerous germs are those which come from infected puerperae. This fact explains why the mortality after spontaneous delivery in the hospital is higher than at home.

A committee of eminent obstetricians appointed by the British government<sup>38</sup> in its final report recommended that cases of sepsis, whether arising in the hospital or admitted from the outside, should not be treated in a maternity hospital unless an entirely separate block, separate nursing and ward staff and separate staff accommodations were provided. For cases that might be a source of danger similar precautions should be taken, and even cases of abortion should not be admitted to ordinary wards.

These excerpts support the medical necessity of DeLee's demands architectural separation of the maternity hospital from the general hospital and strictest isolation of infected or even suspicious cases. Another question is whether these demands can be carried out economically, but for the welfare of the mothers nothing should be too expensive.

#### FACING THE FACTS

By DR. DELEE

One would think that every hospital superintendent or department head would receive an awakening shock on reading Dr. Siedentopf's paper, yet when my first two articles were published, presenting similar facts and advising absolute segregation of clean cases, a stormy discussion followed. All those who took part emphasized the financial aspect of the situation—segregation was too costly, in money. I will say only this: Nothing compares in value with human life.

J. Whitridge Williams<sup>39</sup> said that at Johns Hopkins "for nearly a generation" the infectious isolation ward of the whole hospital was adjacent to the maternity and its entrance not 20 feet away from the door of the obstetric ward, yet "serious infection rarely occurred and at no time caused anxiety." Newer and better quarters are now obtained, although the isolation ward is still nearby and the connections with the general hospital are the same. In 1927, in his discussion of my papers he said:

It is a matter of indifference what types of patients occupy the floors above or below the maternity, so long as a really rigid aseptic technic is employed by the medical staff and the best traditions of intelligent nursing are followed.

In spite of the "best traditions of intelligent nursing," the reports of this hospital show one of the highest morbidity rates in the United States, and a year before Williams died he told me they had an epidemic of puerperal sepsis of sixty-two cases.

Dr. Joseph B. Howland<sup>40</sup> of Peter Bent Brigham Hospital, Boston, said in his reply that my "recommendations were disconcerting" and that I must present "more evidence" before hospital building committees would follow them. Well, the evidence, enough to convince any jury of husbands or any committee of life insurance adjusters, was presented in 1927 and is

piling up so high that it may fall on the most obstinate objector. Dr. Howland says that the "modern hospital laundry" can be trusted to sterilize the wash and that "autoclaves sometimes are faulty in operation, but this is no excuse for faulty sterilizing."

All hospitals sterilize laundry for the operating rooms, and many autoclave the linen going to the nurseries—to prevent pemphigus, i.e., they do not trust "the modern hospital laundry." My bacteriologic studies prove that the streptococcus et al. can go through the latest American laundry machinery unscathed. Furthermore patients sicken and die because of faulty sterilizing (as occurred recently in a new hospital), and had those faulty sterilizers not been given virulent organisms, prevalent in the surgical wards, to sterilize, their faultiness would not have been fatal. Finally, it was from Boston that Kellogg reported nine epidemics of puerperal infection.

Dr. J. C. Doane of Philadelphia spoke of our "modern knowledge concerning the nature of bacteria and the modes of their transmission from the sick to the well, and particularly in view of our recently acquired knowledge concerning scarlet fever and measles."

Dr. L. A. Sexton of Hartford, Conn., says: "It is a well established fact that the various types of infection, even contagion, can be handled in the same ward by the same personnel without cross infection if a sufficient amount of intelligence is put into service."

After reading of the widespread epidemics in the United States and abroad, only one conclusion is possible: the amount of intelligence available for the service is insufficient.

I claim that not enough is yet known "of the nature of bacteria, and of the means of their transmission from the sick to the well" and that therefore infected puerperae or any infection cannot be handled in the same ward by the same personnel, nor indeed in the same building with healthy women. The work of Richardson,<sup>41</sup> to be mentioned later, may be considered in this connection.

Up to this point I have spoken only about puerperal infections. But the surgeons have many epidemics and numerous cases of cross infections too. I have personal knowledge of epidemics of varying severity on the surgical side, such as successive peritonitis cases after clean operations in three different hospitals, pyocyanus contamination of every surgical wound on two large floors, two small epidemics of tetanus, numerous epidemics of "catgut" infection. At a county medical society meeting held in a large city at which I was present, one hospital reported 17 per cent mortality after hysterectomy for fibroid, another, 8 per cent.

Recently a Florida hospital had twenty cases of gas bacillus operative wound infection with eight deaths. In March, 1927, a new hospital in Illinois had thirty-eight pyococcal operative infections at one time.

In a general hospital in Maryland, three clean laparotomies were done one morning, all three patients died of peritonitis.

In a general hospital in Massachusetts, a similar condition prevailed.

In June, 1925, an article appeared in an American journal detailing six cases of fatal peritonitis following apparently clean operations. Bunin mentions such epidemics as occurring in Berlin; Zweifel refers to cases in Leipzig.

<sup>38</sup> London Letter, J. A. M. A 99 926 (Sept. 10) 1932, taken from Final Report of Departmental Committee on Maternal Mortality and Morbidity, British Ministry of Health London, 1932, p. 40.

<sup>39</sup> Williams, J. W. Is an Architecturally Isolated Building Essential for a Lying-in Hospital? Mod Hosp 28 58 (April) 1927.

<sup>40</sup> Howland, J. B., Ehrenfest, Hugo, Doane, J. C., and Sexton, L. A. Separate Building or Department for the Maternity? Mod Hosp 28 103 (May) 1927.

<sup>41</sup> Richardson. Monthly Bull. Dept. of Health Providence R. I., January, 1926.



The Germans have long appreciated the dangers of hospital contagion. Sippel,<sup>42</sup> declaring that epidemics of peritonitis still frequently occur in German hospitals in spite of aseptic technic, insisted that special wards and operating rooms be given to clean cases. Franz, Germany's greatest gynecologic operator, who died in 1926, demanded the same.

Tinker<sup>43</sup> of Ithaca, N. Y., in 1926, referred to the reports of sixteen surgeons who admitted serious wound infections in their work—streptococcus, gas bacillus, tetanus. A surgeon left a great university hospital to practice in the country in the West. He was astounded at the rarity of infection in his "kitchen laparotomies," compared with the frequency in his famous hospital.

One of the objectors to my first papers has recently had something to think over when twenty-six patients died in an epidemic of surgical infection in his own hospital, largely "clean" cases.

It is high time that the profession realized that conditions are not the best in our hospitals today, because if we don't do something about it the public will. Bacon<sup>44</sup> has recommended state inspection and supervision for the maternities, but I hold that if this is done the surgery should be governed likewise and the other hospital departments as well.

What can be done about it? First of all, it must be realized that the human being is the most common ultimate source of infection and that since large numbers of diseased persons are gathered together in one place in the general hospital, this is a veritable cesspool of infections. To put it more mildly, it will be granted without argument that if infectious cases are present in a hospital, to carry the bacteria they emit to clean cases under the same roof will be easier than it would be to import the bacteria from the outside.

How are the germs transported? There are only three ways: direct contact, indirect or intermediate contact, and the air-borne route.

#### AIR-BORNE INFECTION

While I consider, as does every one else, that indirect contact distribution causes most epidemics and sporadic cross infections in hospitals, I feel that currents of air can transport inoculable bacteria from one patient to another, even if they are separated in different parts of the same building. This sounds almost archaic, reminding one of the old "miasmatic" days, and I would like to say a good deal about it, because, first, it may explain certain rare and mysterious individual cases and epidemics, secondly, it touches intimately on the borderlands of the field of indirect contact infection, thirdly, when one is striving for perfection no detail lacks importance, and, fourthly, if the danger of air-borne disease is shut out, most of the possibilities of direct and indirect contact infection are automatically eliminated. But lack of space forbids and I must content myself to referring to my original articles in the *Modern Hospital*, to my textbook, and to a few general statements.

Is it a far-fetched assumption that pus or germ-bearing liquids spread on the floor may dry to powder, be ground up by traffic, and in the form of fine dust be disseminated throughout the institution by swirling

air currents or ventilating flues? Further, it is known that many bacteria retain their vitality and infectivity for hours or days (tetanus spores for years). Is it too much to believe that germs carried to the patient in this dust or in the droplets of saliva that are ejected in talking, laughing, coughing, sneezing and that float in the air for hours and, settling on the sterile field of operation, on the catgut, on the operator's gloves, on the open wounds in surgical cases, on the vulva of the parturient woman on the open wounds of the perineum, on the cracks in the nipples or on the baby's navel, may, even though weakened by drying and light, set up minor and graver infections?

Most hospital managers do not want to believe this, but Bumm (Germany's greatest obstetrician and an expert bacteriologist), Benthin, Hektoen, Kirschsteiner, Friedemann and Deicher, Trillat and many others declare it true. Trillat, professor at the Pasteur Institute of Paris, goes further and says that germs in droplets of moisture multiply during transit from one ward to another, some of these droplets becoming "veritable culture mediums" during their time of suspension. In presenting the work of Trillat to the Academy of Sciences recently,<sup>45</sup> Roux stated that Trillat has succeeded in demonstrating the correctness of his theories of air-borne infection by bringing about the inverse operation, namely, immunization. He made use of the infective agent of chicken cholera, after having shown that the contagion took place in the atmosphere of the poultry houses. He sprayed into this atmosphere dilutions of cultures, attenuated microorganisms and vaccines, and brought about thus the rapid disappearance of epidemics in the infected poultry houses. Roux thought the work valuable as applied to the case of influenza, pneumonia and the like.

Indirect contact—the bacteria emitted from one patient being carried on instruments, gauzes, bed linen or blankets, on the hands of the attendants, on their clothes, on their hair or in their throats, and thus inoculated into another patient—is the most common method.

The chance of infection being carried in this intermediate manner depends on the qualities of the particular organism, on its life tenacity when dried or exposed to light, on its possessing spores and on other things. Terribly subtle are the habits of bacteria, and what was thought to be known about them is being demolished by the latest discoveries of Calmette, Kendall, Trillat, Ryan and Arnold,<sup>46</sup> and others. Many bacteria are showing pleomorphic qualities hitherto unknown, and why not therefore pleopathic action?

Lately it is being learned that surgeons and nurses can cause fatal infections by spitting the bacteria from their throats and blowing them from their noses into wounds and on to the sterile instruments.<sup>47</sup> Also the carrier's hands, hair, clothes and everything he has touched become covered with the bacteria from his mouth. The air of the room occupied by such a carrier soon becomes an incubator filled with suspended droplets of saliva. That this danger is beginning to be recognized is evident from the practice seen in the best operating rooms: covering the mouth and nose of every one—observers as well as operators—and the

45 Paris Letter J. A. M. A. 99 573 (Aug. 13) 1932.

46 Experimental Evolution of Bacteria editorial, J. A. M. A. 99 767 (Aug. 27) 1932.

47 Meleney F. L., Zau Z. D., Zaytzeff H. and Harvey H. D. Epidemiologic and Bacteriologic Investigation of the Sloane Hospital Epidemic of Hemolytic Streptococcus Puerperal Fever in 1927, Am. J. Obst. & Gynec. 16 180 (Aug.) 1928.

42 Sippel Translation in Year Book of Obstetrics 1924.

43 Tinker M. B. and Sutton H. B. Inefficiency of Most of the Commonly Used Skin Antiseptics. J. A. M. A. 87 1347 (Oct. 23) 1926.

44 Bacon C. S. Paper read before the Association of Obstetricians and Gynecologists at French Lick Ind. September 1932.

unexceptional use of gowns. Even then, talking should be limited. Here air-borne and indirect contact infection fuse. But in the absence of actual nasopharyngeal disease, where do the surgeons and nurses pick up these virulent streptococci? Certainly not from the clean wards. If droplet transmission is so common, why are not more cases reported from private practice?

We have cited enough instances to prove the frequent occurrence of cross infections in both obstetric and surgical work. The Providence (R. I.) City Hospital is often mentioned as an example of what may be done in the care of the different contagious diseases under one roof. Compared with twenty years ago, Richardson's achievements in Providence are splendid, but I would not be satisfied with them, and he admits that with a changing nurse personnel perfect medical asepsis is impossible, and that "once measles, for instance, is introduced by mistake, most of the patients in the ward will contract the disease before the primary case can possibly be removed." He says, further, that "to be of any service the technic should be as rigid as that practiced in the operating room."

Any surgeon who will go over in his mind the vast machinery and complicated technic, the prolonged scrubbing, the numerous personnel, the rubber gloves and the like that make up the system of the modern operating room will agree with me that for an unassisted nurse or intern to carry out such multitudinous details on a ward floor, day in and day out, night after night, is impossible. Breaks in technic are bound to occur, and the statistical tables presented by Richardson in the article from which these quotations were made prove it.

Confirmatory experience respecting pemphigus neonatorum is in the stories from all general hospitals. No one is exempt, and in many the disease is continually endemic, breaking out all too often with extreme virulence. *Special maternities have pemphigus, too, but with markedly less frequency and severity.*

Illuminating and convincing is the history of the experience of the Chicago Lying-in Hospital. In 1,500 cases delivered in our first hospital, a remodeled residence with a washboiler for a sterilizer, there was one death from sepsis, a girl who had been raped and contracted gonorrhea, spontaneous delivery at term, with peritonitis, at autopsy pure cultures of gonococci and *Streptococcus pyogenes* (Prof. F. Robert Zeit, Northwestern University). One case of pemphigus occurred in this house, in the baby of a medical student who was clerk in a skin clinic at Rush Medical College.

In our next hospital, in which we had to care for infected cases in the building and delivered 2,500 women, we had one death, a cross infection of pneumonia, several puerperal infections, two epidemics of pemphigus, and one epidemic of breast abscesses, with fifteen cases.

In our third hospital, in which we had complete isolation of both clean and infected cases, we were happy. In twelve years and eleven months we delivered 34,807 women of 35,179 babies. We had a total maternal mortality of ninety-two, or 0.264 per cent. There were insignificant groups of mild infections without deaths, and there were only thirteen septic deaths distributed over the years. There were five embolisms, two women entered with sepsis in labor, two had pulmonary infection (autopsies made by Prof. H. Gideon Wells, University of Chicago), one entered with chancroids, precipitate labor, one entered with

fresh gonorrhea, one died from transfusion, one had primary meningitis (autopsy). Adding in the emboli, which I consider always infections, we have eighteen (uncleansed), or 0.00051 per cent, or one infection death in 1,923 cases. Among the 35,179 babies, pemphigus appeared in epidemic form on two occasions, each time about twenty-five cases, and one baby died, the rest of the twelve years and eleven months we were exempt.

Our morbidity for this period was, according to the Strasbourg standard, 3.9 per cent, the British, 5.8 per cent, and our own strict standard, 11.9 per cent.

Then we moved to our present hospital, in which our isolation of the clean as well as the infected cases is good but not so complete. We have gynecologic cases in the building, and, further, our connections with a general hospital, research laboratories and the autopsy room are more intimate, though much better than the maternity ward in the average general hospital. There was little change in our practice, and that little should have improved our results because we did less operating (less polypragmatism) because we felt less safe than before.

Our experience immediately underwent a complete metamorphosis, and I found restored the conditions I had lived in during my service in the five general hospitals with which I had formerly and for many years been connected. During the first seven months we had an epidemic of puerperal infection, ten cases with two deaths. During this period our morbidity rate, according to the Strasbourg standard, was 4.7 per cent, the British, 13.5 per cent, and our own strict standard, 42.5 per cent. Pemphigus has been endemic most of the time, and we had one severe epidemic, fortunately without fatality. At the present writing we are free from infections.

These experiences in our own hospitals, with a technic improving right along, are almost equivalent to a laboratory experiment.

#### SUMMARY

A study of the incidence and causes of puerperal mortality was made by an unprejudiced observer.

Hospitalization of maternity cases is increasing everywhere, but the puerperal mortality is not decreasing anywhere.

Numerous authors call attention to the high institutional mortality compared with that of deliveries in the home.

Meddlesome midwifery and puerperal infection seem to cause the greater part of the mortality, either singly or in combination.

Dr. Siedentopf and I have collected more or less documented reports of thirty-eight epidemics of puerperal infection, of which thirty-five were in the maternity wards of general hospitals.

Numerous authorities agree with me that women are safer from infection at home or in a specialized maternity building, and some go even further than I do in the strictness of isolation.

#### CONCLUSIONS

Meddlesome midwifery must be abated or made safe.

Something is wrong with the maternity wards of general hospitals, and a great deal ought to be done about it.

My recommendation is architectural and administrative isolation of the clean maternity, until more is known about the nature of puerperal infection.

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ECLAMPSIA WITHOUT CONVULSIONS  
TERMINATING IN CEREBRAL  
APOPLEXYARTHUR G. KING, M.D.  
NEW ORLEANS

The use of the term "eclampsia without convulsions" has engendered a great deal of discussion, even though it has the sanction of many authors. Williams<sup>1</sup> defines eclampsia as an acute toxemia, usually but not always accompanied by convulsions. On the other hand DeLee<sup>2</sup> states that eclampsia is not a disease by itself but only a symptom the most outstanding one, of several underlying diseases. He recommends that the term "eclampsia" be used to cover all cases of toxemia in late pregnancy, which, if untreated or not properly treated, may lead to convulsions or coma or both.

The confusion is the result of the ignorance that surrounds this clinicopathologic complex. There is still, unfortunately, no better term than "toxemia" to describe the condition of women who are sick, who have one or several different poisons in their tissues, manifested by vomiting, by a kidney lesion or severe liver damage, by retinal hemorrhage or even cerebral apoplexy, by premature separation of the placenta, or by a polyneuritis or a psychosis.

Although the phrase "eclampsia without convulsions" can well be criticized, it is used here to mean the condition in pregnancy in which death occurred without convulsions but which resulted in autopsy observations identical with those of eclampsia. With the presentation of this report a review of the literature was felt indicated, as the last discussion of this condition in English, as far as can be determined from the available literature, appeared in 1907.<sup>3</sup>

To Schmorl, at the end of the last century, is quite universally given the credit for the establishment of the pathology of eclampsia. According to Liebmann,<sup>4</sup> he described it, briefly, as "degenerative kidney changes, particularly in the convoluted tubules where albuminous and fatty alterations are observed, necrosis in the liver with thrombosis in the interlobular and intralobular vessels, degeneration in the heart, particularly in the muscles, hemorrhage and softening in the brain, and widespread thrombosis in the internal organs." Bell<sup>5</sup> has recently described what he considered a characteristic kidney glomerular lesion consisting of a dilatation of the glomerulus and a thickening of the capillary basement membrane with a narrowing of the lumen of the capillaries. The clinical and laboratory observations of this symptom complex have been so widely discussed in the textbooks and the literature that further mention is not necessary. Suffice it to say that all, many, few or even none of these symptoms and conditions accompany cases that have been competently diagnosed by the term eclampsia.

The insidiousness of the condition has been stressed but these cases of eclampsia without convulsions should serve to stress ever further the dangers that lurk in

pregnancy. They should warn the physician that treatment should be instituted before the onset of convulsions. They should emphasize again the importance of the so-called prodromal symptoms. Finally, recognizing the existence of this condition may help to clear up doubtful diagnoses.

In all, forty-three cases have been reported, although doubtless many others have been undiagnosed or have not been recorded. Slemmons<sup>3</sup> found seven previous cases and added two more in 1907. The next review was that of Schmidt,<sup>6</sup> in 1911, who brought the total to twenty-four. Caffier<sup>7</sup> found thirty-eight cases up to 1927, with four others that had to be discarded because of the incompleteness either of the anamnesis or of the autopsy. His paper brings the literature to that date. Since then, similar conditions have been reported by Liebmann,<sup>4</sup> Pohl,<sup>8</sup> Bock,<sup>9</sup> and Wronski.<sup>10</sup> Bock adds also the case of Burg and mentions three others as well as the case of Thallheimer, which cannot be included because of the lack of necropsy evidence.

The conditions found in these cases are of particular interest to all clinicians, for analysis, only thirty of the forty-four, including the present one, are available. The age limits were from 18 to 43 years, the parity from primigravida to tertiodeciparity, with the distribution of nineteen primiparas and eleven multiparas. Prepartal cases numbered fourteen, of which the earliest was at three months, and ten were intrapartal, with six puerperal. These proportions are similar to those recorded by Greenhill (as quoted by DeLee) for the distribution of true eclampsia.

Of these thirty cases, only fourteen showed true premonitory signs. This amazingly low figure makes the seriousness of the situation all the more apparent. It is not impossible that symptoms would have been observed in the others had they been looked for, but this fact emphasizes again the necessity for the strictest watchfulness by those attending confinement.

Headache was the commonest symptom of all. Vomiting occurred eleven times, edema, ten times, visual disturbances occurred in six and epigastric pain in five cases. Albumin in the urine was reported only fifteen times, and fever was observed in fourteen cases. In nine instances circulatory collapse was the first warning of anything abnormal, and in eight cases unconsciousness, with or without the cardiac signs, ushered in the condition. The blood pressure records, unfortunately, are largely absent from the reports of the European clinics. In ten of these cases the diagnosis was missed completely until after the autopsy.

Equally uncommon and equally important for diagnosis and treatment is the matter of cerebral hemorrhage in eclampsia. Schmorl described bleeding into the brain as a significant part of the pathologic condition, and this has been confirmed by many other authors. However, the typical hemorrhage is a punctate one, and the frequency has been estimated at from fifty-eight out of sixty-five by Schmorl<sup>11</sup> to six out of twenty-one eclamptic autopsies by Teacher.<sup>12</sup> The

From the Department of Obstetrics, Tulane University of Louisiana School of Medicine and Charity Hospital.  
1 Williams J. W. *Obstetrics*, ed. 6. New York: D. Appleton & Co. 1931.

2 DeLee J. B. *Principles and Practice of Obstetrics*, ed. 5. Philadelphia: W. B. Saunders Company, 1928.

3 Slemmons J. M. *Eclampsia Without Convulsions*. Bull. Johns Hopkins Hosp. 18: 448, 1907.

4 Liebmann Stefan. *Eklampsie ohne Krämpfe*. Zentralbl. f. Gynak. 10(2): 1906 (Aug. 22) 1925.

5 Bell E. T. *Renal Lesions in the Toxemias of Pregnancy*. Am. J. Path. 8: 1 (Jan.) 1932.

6 Schmidt H. H. *Eklampsie ohne Krämpfe und ohne Bewusstlosigkeit*. Ztschr. f. Geburtsh. u. Gynak. 69: 143, 1911.

7 Caffier Paul. *Retrospektive Diagnose auf Eklampsie ohne Krämpfe*. Med. Klin. 23: 162 (Feb. 4) 1927.

8 Pohl R. *Plötzlicher Tod in der Schwangerschaft*. Zentralbl. f. Gynak. 51: 913 (April 9) 1927.

9 Bock A. *Klinischer Beitrag zur tödlichen Gestose ohne Krämpfe*. Zentralbl. f. Gynak. 52: 102 (Jan. 14) 1928.

10 Wronski M. *Zur Eklampsie ohne Krämpfe*. Zentralbl. f. Gynak. 53: 1528 (June 15) 1929.

11 Schmorl. *Archiv f. Gynak.* 65: 504, 1902.

12 Teacher J. H. *Discussion on Eclampsia*. Brit. M. J. 2: 1125 (Oct. 26) 1912.



cause is not known with any exactness, although the convulsion itself as the cause has been discarded. As will be pointed out, hemorrhage occurs in the absence of convulsions. A likely explanation, as Benda<sup>13</sup> brought out, is the increased capillary permeability due to the toxemia.

Binder<sup>14</sup> recently reported a case of typical puerperal eclampsia in which, although the convulsions were controlled, death occurred on the sixteenth day from a hemorrhage into the left frontal lobe. He was able to find only fourteen others of massive hemorrhage fully reported, with reference to nine more. It is of interest to note that in his group the patients of Cronin and of Knight (quoted by Barrett and Harger<sup>15</sup>) who recovered from the hemiplegia did not have any convulsions. In the absence of demonstrable pathologic lesions, these two reports could not be included in the series of eclampsia without convulsions.

In the thirty cases of this series, the autopsy records make no mention of the brain in seven instances, in three, examination of the brain was negative, in two the brain was described as ischemic, punctate hemorrhage was found in ten. In nine cases, massive hemorrhage into one or another part of the brain is recorded. These are the reports of Desnoes, Seitz, Menière, Moynier, two by Schmorl, Esch, the recent one of Pohl, and the present one. Such a high incidence of eclamptic apoplexy in the absence of convulsions should be taken note of in the study of the subject.

#### REPORT OF CASE

A Negro woman, aged 19, a tertipara, was brought into the hospital in coma. Her past history included what was termed Bright's disease many years before, with a recurrence of edema of the face and feet on several occasions since. Other past history, family history and menstrual history were negative, and her two previous pregnancies were uneventful. Her present pregnancy was calculated to end the early part of March, 1932, and she had been followed in the outpatient department since the previous October. At that time her blood pressure was 104 systolic and 65 diastolic, the urine was normal and the general examination satisfactory. At no time did she have any toxic symptoms or vaginal bleeding, the urine was consistently normal, and her blood pressure varied between 95/75 and 115/85. This last reading was obtained at her last visit, two weeks before her admission. The Wassermann reaction had been recorded as negative.

February 28, she awoke from sleep twisting in bed, pulling her hair, and complaining of severe pain in the head. She became stuporous and lapsed into coma the following day, at which time she was brought into the hospital. Because of her condition the examination was meager. She was comatose and presented a ptosis of the right lid, contraction of the right pupil, flaccidity, partial anesthesia, and slight increase of reflexes on the right side. The lungs showed moist râles at both bases, but the heart was perfectly normal. There was no edema, but her blood pressure at that time was 150 systolic and 90 diastolic, and the urine showed a trace of albumin. A chemical examination of the blood showed nonprotein nitrogen, 30, and sugar, 95, unfortunately the uric acid and the carbon dioxide combining power values were not obtained. The Wassermann reaction was again negative. The patient had a full term fetus which was alive. The next day her blood pressure had risen to 150 systolic and 120 diastolic, and the signs of the hemiplegia, which had been slight, became more marked. On consultation with the neurologic service a lumbar puncture was done, and bloody fluid at a heightened tension was obtained. Unfortunately, a Wassermann test on this fluid was not done.

A full term live baby was delivered the next day, March 2, by a classic cesarean section under local infiltration anesthesia, primarily for the sake of the child, but also in the hope that rapid termination of the pregnancy might ameliorate the mother's condition. Although the patient was treated with infusions of dextrose, her temperature, which had been elevated on admission, rose steadily, and ten hours later she died. At no time did she recover full consciousness, although she moved her left leg a little during the operation, and at no time did she have anything resembling a convulsion.

The significant gross observations at necropsy were as follows. The left kidney was found enlarged to twice the normal size with a markedly dilated ureter, the capsule stripped easily, but the surface was very congested. The brain showed massive hemorrhage from the lenticulostriate artery into the internal capsule, with considerable destruction of the brain tissue.

The study of the microscopic sections showed in the kidney a slight degree of hyperemia of the vessels, there was an albuminous exudate in the glomeruli, without, however, any increase in cell content, and a slight thickening of the wall of Bowman's capsule, the tubules showed marked degenerative changes with entire necrosis in some places. The liver presented a picture typical of focal necrosis. Although the areas were few, each was characteristic and surrounded by a zone of slight hyperemia and white blood cells. There was parenchymatous degeneration of the liver cells, and in a few places there was pyknosis or complete disappearance of the nuclei. In the brain, in the neighborhood of the massive hemorrhage, there was vast destruction of the nervous tissue without signs of repair or glomatous hyperplasia. In other parts of the brain many small hemorrhages were observed, resembling more diapedesis of red blood cells through the wall of the markedly hyperemic vessels than rupture of the vessels. These petechial hemorrhages filled the perivascular spaces and penetrated but little into the nervous tissue. Other organs showed no pathologic changes.

The diagnosis of the pathologist was status post cesarean section, subacute glomerular nephritis with degenerative tubular nephritis, focal necrosis of the liver, petechial and massive hemorrhage into the brain, eclampsia.

Dr Emmerich von Haam, who examined the sections, adds the following discussion: "The diagnosis of eclampsia is justified by the pathological findings of the severe changes in the kidney combined with the typical focal necrosis in the liver and the multiple hemorrhages in the brain. The degenerative changes in the kidney were more marked than the few signs of damage to the glomeruli and were of acute origin. The necrotic areas in the liver were not as numerous as is usually found in eclampsia, but the short course of the disease gives satisfactory explanation. For the findings in the brain hardly another etiological factor can be given than that of eclampsia as described by Schmorl and others. No change in the vessel walls of the vascular system could be found which might indicate a luetic or an arteriosclerotic origin."

#### SUMMARY

This is a case, then, of a pregnant woman, aged 19, dying at term of cerebral apoplexy. Syphilis and arteriosclerosis can apparently be ruled out. She had no prodromes of any sort and the diagnosis was made on the hypertension, albuminuria and suddenness of onset in a pregnant woman. There were no convulsions, but the pathologic condition was identical with that of eclampsia. For want of a better term, and conforming to the usage by many authors this case is described as "eclampsia without convulsions." It takes its place with forty-three other such cases reported in the literature and reviewed here, and its termination in massive cerebral hemorrhage finds a counterpart in at least eight of these. This tragic complication reveals the insidious, but more important, the protean nature of the "toxemias of pregnancy" and the need of careful study for the prevention, diagnosis and treatment.

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<sup>13</sup> Benda, Robert. *Zentralbl f Gynak* 50: 727 (March 20) 1926.  
<sup>14</sup> Binder, Joseph. *Postpartal Eclampsia with Death from Cerebral Hemorrhage*, *Am J Obst & Gynec* 15: 849 (June) 1928.  
<sup>15</sup> Barrett, C W, and Harger S B. *A Consideration of Eclampsia with a Case Accompanied by Hemiplegia*, *Am J Obst & Gynec* 60: 463 (Sept.) 1909.

OINTMENT OF YELLOW MERCURIC  
OXIDE (PAGENSTECHER'S  
OINTMENT)

ITS USE AND ABUSE

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AND

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SAN FRANCISCO

How did yellow oxide of mercury salve—fine old panacea for all the ills of the eye and adjacent anatomic structures, known to every physician, surgeon, specialist, nurse, optician, housewife and grandmother—obtain its undisputed place in the pharmacopeia and in the hearts of our ailing countrymen? Introduced into ophthalmology for one specific and minor purpose, how did it become a universal cure-all? Long ago abandoned by most experts, why does it tower above the one other preparation embalmed in the memories of generations of medical students and share its place only with a bastard silver agglomeration as “something good for the eyes?”

Library and laboratory research, contemplation and questionnaires fail to reveal the answers to these questions, but the phenomenon is worthy of consideration and the history of the salve is interesting.

An account of Pagenstecher's ointment first appeared in English ophthalmologic literature in the second volume of the *Ophthalmic Review*, published in 1866. Alexander Pagenstecher of Wiesbaden had been goaded to a fine state of frenzy by reading a paper written by his English contemporary Mr. Spencer Watson, in which the use of setons was recommended for obstinate cases of “phlyctenular keratitis” and corneal ulcer. His courtesy to his English colleague was unflinching, but his skepticism is apparent in every sentence. His state of mind is evident from the fact that he wrote only one other unimportant paper in his long life and that in his yellow oxide paper he gave away a valuable, long-guarded, family secret. He succeeded in burying the barbarous seton, as today few practitioners have heard of the implement, much less seen one.

The object of this study is not to bury Pagenstecher's salve entirely, although we are convinced that the profession and the public would be as well or better off without it, but merely to restate in the originator's own words what it was intended for, how it should be used, and some of the untoward results of its misuse.

## PREPARATION OF THE OINTMENT

Dr. Pagenstecher states that red mercuric oxide had been a favorite preparation for treating sore eyes for many years and constituted the basis of many secret remedies. It was applied in much the same indiscriminate fashion that the yellow oxide is today. He examined the red oxide under the microscope and was appalled to find that it consisted of sharp-cornered crystals of assorted sizes, somewhat broken up by the action of the mortar and pestle. He therefore went into conference with his apothecary, a Dr. Hoffman, a man who knew his chemistry. Pagenstecher did him the honor of quoting his own words, so it is now known exactly how the change from the red oxide to the yellow was effected and why.

The red crystalline oxide was prepared by the dry method of heating mercury in an open dish, collecting the oxide, and then triturating it in a mortar with a pestle. The amorphous yellow oxide was prepared by the wet method of adding to a solution of mercuric chloride ( $\text{HgCl}_2$ ) an excess of a solution of potash ( $\text{KOH}$ ). The supernatant fluid was then poured off, the precipitated oxide was washed with distilled water and dried with gentle heat.

Next came the question of a proper vehicle. “It must be soft without being too fluid lest the heavy oxide sink to the bottom, but when in contact with the body it must completely melt so that the preparation it contains may be quickly and uniformly diffused over the eye. Besides this peculiarity of behavior, the vehicle must be, as far as possible, indifferent in its behavior to the oxide, and exhibit the least possible tendency to rancidity, which might exert a deoxidizing, reducing action on the oxide.”

He tried hog fat, butter, glycerin, glycerin ointment and mixed fats, giving the preference to the last. He recommended a mixture of spermaceti wax, almond oil and rose water, known as “cold cream,” except that he omitted the rose water and varied the amount of almond oil, which he prepared himself, according to the weather. He also varied the percentage of oxide in accordance with Dr. Pagenstecher's wishes as determined by the individual patient's tolerance.

## PAGENSTECHER'S RECOMMENDATIONS

We can do no better than quote directly from Pagenstecher's original paper, although his ponderous style must be condensed in places.

The ointment is indicated in conjunctivitis and keratitis phlyctenulosa, and all the allied and resulting forms of corneal disease. I consider conjunctivitis and keratitis phlyctenulosa as purely local diseases of the conjunctiva and cornea, which become modified secondarily by the constitution of the patient. The anatomic, typically characteristic form consists in vesicles, or pustules, on a basis of infiltrated tissue of the conjunctiva. They are developed mostly near the cornea at the limbus. These vesicles soon pass, as the epithelium gets destroyed, into raw surfaces, the surrounding infiltrations becoming removed, a loss of substance in the form of an ulcer thus ensuing. We very often see the disease represented by one single vesicle on the cornea, which passes into an open ulcer.

Ulcers at first of very limited extent appear to spread in area, or even invade the deeper layers of the cornea, then we have to contend with keratitis ulcerosa, or keratitis profunda, forms to which the ointment is often inapplicable.

The good effect of the ointment is most displayed in the more chronic cases, after the originally greatly increased irritation of the cornea has somewhat abated, and the vascularization appears under the form of what is generally known as passive congestion. If the disease is in a more acute stage, the ointment may be applied from the very commencement, if care is taken to remove it completely from the conjunctival sac, as some, from the spasm of the lids which is associated with the photophobia, may get retained in the folds of the mucous membrane. The disease may possess the peculiarity of the recurrence of the phlyctenulae. Fresh phlyctenulae then form near the ulcer, always giving rise to increased irritation. Our attention is attracted by increased intolerance of light, lacrimation, and ciliary neurosis, an accurate examination then generally reveals small abscesses or phlyctenulae. As soon as the abscess, by breaking through the epithelial layer, has discharged its contents, the previous state of quiescence at once returns. These intercurrent attacks must not deter us from continuing the application of the ointment, for it rather accelerates than otherwise the course of the disease. Only when the base of the ulcer is extending deeper than Bowman's layer, into the corneal substance proper, must we exercise caution in using the ointment, and only try it in the first instance as a matter of experiment. If from

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too long continuance of the stage of reaction, we gather that the ointment irritates too much, we must wait for a day or two before trying it again. In such cases it is well to employ also remedies of known sedative effect, such as atropine, a compress-bandage at night, warm fomentations for a few hours. It may also happen that superficial ulcerations of the cornea under unfavorable circumstances pass into purulent corneitis, purulent infiltrations in the layers of the cornea, or hypopyon forms, and of course, here to apply the ointment is out of the question.

The contraindications for the ointment may be briefly enumerated, as they are easily self-comprehensible. As regards the other inflammations of the cornea, no good effect can be observed from yellow mercuric oxide. Corneitis purulenta, blenorrhoica or vasculosa, originating in granular lids and trachomatous pannus, generally get worse under it. In syphilitic corneitis parenchymatosa it has no effect one way or the other, but in the consequent obscurations of the cornea the ointment may be used, after all acute symptoms have completely vanished, to clear the cornea. If any iritis coexists, the ointment must be studiously avoided, as well as in all deep infiltrations and ulcerations of the cornea. I have often asked myself on what physiologic fact the good effect of the yellow oxide depends but must confess my inability to answer this question satisfactorily. Its immediate effect is undoubtedly irritant, for any previous vascularity is at once heightened on its application.

He finishes with a warning to be sure to wipe out any excess of the ointment with a clean piece of linen and questions the advisability of allowing the patient to use it at home because it may irritate too much. He did, however, permit the intelligent patient to use it at home. This is all in marked contrast to the way the ointment is prescribed and used today.

We think that a moment's reflection will show why the ointment is effective in the disease for which it was designed when used in the manner Pagenstecher recommended. The mechanical abrasive effect helped remove the sloughing foci of round cell infiltration after the phlyctenule had broken down into a superficial ulcer. The ointment by its very irritation produced an added supply of blood and lymph, which hastened repair. Dr. Walter Scott Franklin used the ointment with great skill in the treatment of phlyctenular conjunctivitis and keratitis and he, like Pagenstecher, obtained results when he applied the ointment himself and failed when the mother thought she could apply it at home. If the treatment had to be carried out at home, mild soluble antiseptics, hot compresses and atropine yielded better results.

The clue to why it came to be used for blepharitis, styes, pediculosis, foreign bodies, chalazia, dermoid cysts, folliculitis, senile ectropion, trachoma, and almost every other ocular disease lies in Pagenstecher's observation that, if it was applied too freely and left too long in contact with the tissue, sloughing occurred. The fact that the apothecary Hoffman made the ointment by hand in between his other duties gives the answer. The precipitate was not washed free of the alkali or the alkaline excess was not always maintained and the mercuric chloride was present in small amounts. Either situation would have a profound effect on the bacterial flora of the conjunctival sac, perhaps sometimes even a beneficial effect.

We know of no existing samples of Hoffman's workmanship, but it may be safely assumed that the modern manufacturer has in many ways improved on its purity and uniformity. Herman Pagenstecher,<sup>1</sup> Alexander's younger brother, gives a few more sidelights on the family's contribution to ophthalmology. He tells how the fresh butter, mixed fats and all other vehicles were given up in favor of American petrolatum. This soon

became the favorite vehicle and with slight variations remains so today.

#### USE OF THE OINTMENT IN CALIFORNIA

The salve came to California very early and was probably first used by Dr. Adolph Barkan. Later Dr. Ferrer, another of San Francisco's early practitioners of ophthalmology, had Berthold Broemmel, the father of the present head of the firm of druggists of that name, and a man trained in the same traditions as Hoffman, make up a cone of cacao butter in which the oxide was mixed and cast by hand. These cones are still called for by former patients in spite of the fact that the oxide does not have enough antiseptic value to prevent the cacao butter from becoming rancid. Dr. Barkan<sup>2</sup> says "It is likely that I introduced its use in California about 1869. Its fame spread. It was suggested that I patent the unguent as 'Barkan's Golden California Eye Salve'. I preferred the straight method of medical practice, which I urge all members of our beautiful profession to follow. It leads to honor and success."

#### REPLIES TO A QUESTIONNAIRE

Dr. Adolph Barkan's decision and the weight of his authority certainly contributed to the wide use of the ointment in San Francisco and adjoining regions, but it does not account for the frequency with which it is prescribed by graduates of widely separated medical schools for almost all eye diseases. A questionnaire was sent to ten American professors of ophthalmology in the leading medical schools of the country and to two well known emeritus professors. They were simply asked to list the diseases for which they considered the ointment useful and to state what the teaching in regard to its use was in the clinics of which they were, or had been, chiefs. Courteous personal replies to these apparently silly questions were received from all but two. In one case, we suspect, the questions were turned over to an assistant, who wrote the usual reply without much thought. Out of ten replies, the results were as follows:

For blepharitis	it was used by seven
For phlyctenules	it was used by three
For ulcer	it was used by two
For conjunctivitis	it was used by two
For chalazion	it was used by two
For hordeolum	it was used by two
For folliculitis	it was used by two
For corneal nebulae	it was used by two
For last stages of interstitial keratitis	it was used by one

Of those who used it, four stressed its irritating properties. Of those who did not, one said frankly that it was no good for any purpose, one doubted its value and almost always used something else. One eminent eye pathologist said that his colleagues used it for all sorts of lesions but that he himself had given it up for all conditions except pediculosis.

Dr. Dohrmann Pischel,<sup>3</sup> now visiting the European eye clinics, assures us that the preparation is much less frequently used abroad than in America. Its use is limited to eczematous or phlyctenular keratitis and conjunctivitis. Old indolent ulcers and occasionally blepharitis are treated with it but it is regarded as much too irritating for routine use.

Careful search of the literature reveals not one paper in English, on the use of the preparation since 1866. A

<sup>2</sup> Barkan, Adolph. Personal communication to the authors, March 15, 1932.

<sup>3</sup> Pischel, Dohrmann. Personal communication to the authors, April 8, 1932.

<sup>1</sup> Pagenstecher, Herman. *Klin. Monatsbl. f. Augenb.*, 1898.

Frenchman wrote an article in 1904 questioning the advisability of its indiscriminate and frequent use and casting doubt on its value

#### ACTION OF THE OINTMENT

The physical properties of the substance have been mentioned and are probably the dominant factor in its action and certainly the reason for its irritating qualities and constitute the main objection to its indiscriminate use. Ulcers may be kept from healing almost indefinitely by a thorough daily massage with the ointment. Such treatment of minor corneal abrasions certainly increases the scarring of the cornea as well as the temporary disability and prolongs the period of recovery, particularly in industrial cases treated by general surgeons. We have seen cases in which granules of the substance were visible with the slit lamp and corneal microscope distributed through corneal scars, over which the epithelium had finally regenerated in spite of the treatment.

The consideration of its chemical properties is not so simple. Although it is classified as insoluble in the pharmacopeia and is the last mercurial one would think of using in the treatment of syphilis, for example, it does have definite solubility in water. Mercuric chloride will inhibit the growth of *Staphylococcus aureus* in dilutions of 1:100,000; some authors say 1:300,000. Kolmer believes that the limit of mercurial chemotherapy has by no means been reached and describes one of his own compounds designated merely as number 99 which will do the same thing in a dilution of 1:5,000,000. Mercuric oxide is so slightly soluble that its phenol coefficient cannot be determined. However, Dr. Reddish<sup>4</sup> devised a method of testing various forms of antiseptics; he reported that yellow oxide inhibits the growth of *Staphylococcus aureus*. But in our confirmation of these experimental results we secured no growth in the control experiment using petrolatum, presumably because the conditions are anaerobic.

Letters to five well known firms who manufacture the ointment, in regard to the antiseptic properties of their product, brought four replies. One chief chemist gave no opinion. One called attention to the fact that May, in his textbook on ophthalmology, does not classify the substance as an antiseptic. One felt that it was impossible to estimate its value on the basis of laboratory experiments at all. The fourth had also repeated Reddish's experiments and found, as we did, that yellow oxide would inhibit the growth of *Staphylococcus aureus* on standard Reddish plates and that the petrolatum control would do the same thing for twenty-four hours. If the incubation was continued, however, the organisms grow under petrolatum but not under the yellow oxide ointment. There was no zone of inhibition about the streaks of yellow oxide ointment as there is in the case of soluble germicidal ointments. It is probably true that it is impossible to reproduce in the laboratory exactly the conditions that are found in the eye and consequently the value of the preparation must in the last analysis be fixed by clinical results. Here one must beware of the usual reasoning of the layman, and often of the physician, that a treatment is effective because the disease in that one case got well after the treatment was applied.

We have always felt that the favorable results reported in blepharitis in which most of the authorities

agree on the usefulness of the preparation, were due to the vehicle softening the crusts, which allows their removal without disturbing the tissue of the lid margins and to the prevention of maceration of the tissue by the excess of tears. We find that petrolatum alone or with hydrous wool fat is more agreeable to the patient and just as effective as ointment of yellow mercuric oxide in this condition. Blepharitis often has a constitutional cause and all local treatments are liable to fail if such is the case.

We cannot see how a relatively insoluble drug, each particle of which is thickly coated with an insoluble vehicle, can diffuse into the skin, conjunctiva or tears in sufficient quantity to be of any value as an antiseptic. This stand is backed by the fact that comparatively few of the authorities value it in frankly pyogenic conditions.

Ulcers of the cornea have already been discussed and in pediculosis it is the petrolatum that fills the spiracles of the arthropod and shuts off the supply of oxygen and thus leads to the death of the parasite.

This brings us back to phlyctenular conjunctivitis and keratitis, the original condition for which it was introduced and for which we believe it is still valuable at a certain stage. Fortunately, with the improvement in living conditions and the growth of knowledge of infant feeding, phlyctenules are now a rarity and we feel sure that an ophthalmologist with an active practice actually needs about one tube of Pagenstecher's ointment a year. We doubt the wisdom of ever prescribing it for home use.

490 Post Street

## STREPTOCOCCIC PUERPERAL SEPSIS

### REPORT OF AN EPIDEMIC

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AND

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During a period of nine days, between Oct. 3 and Oct. 11, 1930, inclusive, forty-six women were delivered at Ancker Hospital, the city and county hospital of St. Paul. Among these, puerperal sepsis developed in six (13 per cent), and three (50 per cent) of the infected patients died. October 3, five women were delivered, in three of whom sepsis developed, two of them dying. October 4, six women were delivered, of whom one became infected and died. Another patient, delivered October 11, became infected and recovered. The first two women who became infected had been delivered by forceps, the other four had had spontaneous deliveries. Vaginal examinations before delivery were made in only the two operative cases. All the infected patients had normal temperatures on admission to the hospital.

October 12, two days after the first patient had died and nine days after the beginning of the epidemic, the remaining five patients were transferred to the contagious division of the hospital and preparations were made to open a separate obstetric division for newly admitted patients. No further cases developed, however, and the regular obstetric division was not closed. During the epidemic one febrile patient in the obstetric division, who did not present the clinical picture of sepsis, was transferred to the contagious division and

<sup>4</sup> Reddish, G. F. Testing Antiseptics. *J. Am. Pharm. A.* 16: 603 (July) 1927.

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purulent infection of the antrum was found. The third patient, with a rate of eighteen, had at the time of the examination a purulent salpingitis with high fever.

One woman with hives had the comparatively slow rate of 114, but at other times the rate was faster. She suffered from a chronic polyarthritis and alveolar pyorrhea. The exceptions among the eczema patients were a girl, aged 8 years, with a rate of ninety-eight—slow enough for a child, and a woman, aged 30, with a rate of thirty-eight. The latter patient had at the time of the examination intestinal disturbances following two laparotomies and a peritonitis.

It seems, therefore, that a reasonable explanation is to be found for practically every normal or fast sedimentation rate in allergic individuals if it is conceded that a process which ordinarily accelerates the sedimentation may overcome the expected slow rate. The probability of such an interaction may be demonstrated by a patient who had repeatedly suffered from eczema. His sedimentation rate on the second day of an attack of appendicitis was 662 minutes (extrapolated from 331 minutes to mark 12). With this exception, the patient presented all the clinical and hematologic features of the disease. The surgical intervention performed an hour after the blood was taken revealed a gangrenous appendix. The sedimentation rate on the day following the intervention was faster than before, though still much slower than normal (378 minutes extrapolated from 189 minutes for mark 12) but fell to twenty-nine minutes eight days later and to twenty-two minutes after two more days, when a pelvic abscess developed. Four months later he was reexamined. The sedimentation rate was again very slow, 407 minutes, in the absence of any clinical symptoms. It is probable that similar interactions of the two opposite tendencies could be studied on tuberculous asthma patients in whom the allergic slow sedimentation might counteract the tuberculous fast rate.

#### SLOW SEDIMENTATION RATES IN INDIVIDUALS WITHOUT HISTORY OF ALLERGY

Of the remaining sixty-two patients with very slow rates (54 per cent of the total), several observations were made that deserve comment. One of these patients suffered from iridocyclitis, which is being regarded by some authors as an allergic phenomenon. However, this patient had normal rates at times, and slight unexplained fever at other times. Two out of three epileptic patients tested had very slow rates, and the same ratio applies to the three patients with paranoid delusions who were examined. Many more patients in this group, characterized by what might be called cryptogenetic slow rates, had neurasthenic complaints in the absence of all objective symptoms, with the exception of the slow sedimentation rate. Three of the patients of this group had jaundice—one of them with symptoms of acute yellow atrophy at the end of a pregnancy, which resulted in complete recovery of the mother.<sup>7</sup> Liver treatment—which is known to produce eosinophilia—might have accounted for the slow rates in seven patients of this group. Three of them had pernicious anemia, ordinarily associated with very fast rates. Retardation of sedimentation preceded the increase in erythrocytes in one of these cases. Two patients in the liver group had acholuric jaundice and two were syphilitic patients who had received liver because of secondary anemia.

It may be more than a coincidence that all seven patients with scoliotic sciatica or lumbago whose blood

was examined had very slow rates. This feature deserves attention in the consideration of the pathogenesis of the condition. One additional case is listed under hay fever because the patient came with this complaint first. He has been free from hay fever since but returned in the third season with scoliotic sciatica. Six other patients of this group had neuritic symptoms.

Since a fast sedimentation rate is found almost constantly in patients with malignant tumors, it is worth noting that one of these very slow rates was found in a man with a beginning carcinoma of the rectum and one in a woman who had then a recurrence of a chorion-epithelioma two years after its onset. She was feeling well but had an eosinophilia of 11 per cent.

The sedimentation rate is frequently used for prognostic purposes. Therefore three exceptions, which may not be rare, should be pointed out. Two of the "cryptogenetic" slow rates were obtained in patients with chronic cholecystitis before the surgical intervention was performed. One of these patients died suddenly six days after the cholecystectomy. The other died of an acute postoperative dilatation of the stomach. In another patient of this group, a neurotic woman with a retroversion of the uterus, collapse set in after the operation with a pulse of 160, but the patient recovered. I might add to this group a case not listed, a woman with the comparatively slow rate of 132 minutes during a peritonitis after an appendectomy. Death followed. It seems, therefore, that not only should one give a very fast rate serious consideration but one should not be surprised by postoperative accidents in patients with pathologically slow rates.

Five apparently nonallergic patients of this group were close relatives of patients listed in the table of allergic conditions. One was a boy with diabetes, the son of a woman with mucous colitis. Two were the father and sister, respectively, of a boy with colitis. The mother of this boy is listed under hay fever. One of this group is the apparently healthy, though worried, father of the patient who had substituted lumbago for hay fever. One is a neurotic sister of a slightly less neurotic woman with hives. However, these were not the only relatives in this group. Two of the lumbago patients are brothers, and a patient in the "cryptogenetic" group is their brother. Two diabetic patients of this group are brothers—probably identical twins. Two of the colitis patients are brothers.

The remaining twenty-two patients of this cryptogenetic group presented various, mostly vague, symptoms of a predominantly neurasthenic nature. It is probable that quite a few might have presented, if questioned, previous allergic manifestations or family histories.

#### SUMMARY

A very slow sedimentation rate of the erythrocytes is a constant symptom in allergic individuals unless they show evidence of a complication, especially infection which tends to accelerate the sedimentation. As an infection may mask the expected slow rate so may an allergic individual show a slow rate even in the presence of a serious infection of short duration such as a gangrenous appendix. The interaction of the two opposite tendencies should be taken into consideration in the diagnostic and prognostic evaluation of the sedimentation rates. Sudden postoperative mishaps may occur in patients with abnormally slow rates.

Besides the patients with known allergic conditions a very slow sedimentation rate seems to be fairly constant among patients with lumbago. Liver treatment

<sup>7</sup> This patient had a healthy baby two years later.



seemed to account for the slow sedimentation rates in other patients

The frequency of very slow sedimentation rates among apparently nonallergic close relatives of allergic patients is striking and deserves a closer investigation

A difference in the technic may partly explain the fact that the slow sedimentation rates have been overlooked clinically

310 South Michigan Avenue.

## EPILEPSY AND NARCOLEPSY ASSOCIATED WITH HYPERINSULINISM

REPORT OF THREE CASES OF EPILEPSY AND OF ONE CASE OF NARCOLEPSY CURED CLINICALLY BY PARTIAL RESECTION OF BODY AND TAIL OF PANCREAS

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Lennox and Cobb,<sup>1</sup> in the introductory paragraph of their monograph on epilepsy, state that "most authors think of epilepsy as a symptom rather than a disease entity." Therefore, the most important problem in the study of any case of epilepsy is to find the organic disease, or the functional disturbance, of which the recurring attacks of convulsions and unconsciousness (epileptiform seizures) may be manifestations. In recent years, many cases of grand mal and petit mal, which were formerly diagnosed as epilepsy, have been recognized as symptomatic of organic diseases of the brain such as trauma, neoplasms, encephalitis, meningitis, tuberculosis, syphilis, multiple sclerosis and other cerebral lesions. It is believed by some that epilepsy may be associated with lesions, or functional disturbances of other organs besides the brain, so that medical dictionaries contain such terms as "cardiac epilepsy," "gastric epilepsy" and "menstrual epilepsy."<sup>2</sup> Epileptic seizures, likewise, have been thought to be manifestations of toxins circulating in the blood, and of psychic disturbances. It is evident that there are many causes of epilepsy, including an underlying neurologic constitutional tendency to convulsions. Bates Block, in a comprehensive article on epilepsy,<sup>3</sup> quotes Leftwich, in listing eighty diseases in which convulsions may occur

It seems probable that with the application of the newer clinical and laboratory methods of diagnosis, more and more cases of epilepsy will be found in which petit mal and grand mal are merely symptoms of organic or functional, diseases of various organs. Therefore it may be predicted that the number of cases of so-called idiopathic epilepsy will be greatly decreased in the future and that many afflicted persons now called epileptic will be relieved of the stigma of that classification which is usually interpreted by laymen and by many physicians as meaning "abandon hope all ye who enter here." Certainly no individual should be stigmatized by a diagnosis of epilepsy until every effort has been exhausted to find the disease of which the recurring attacks of convulsions may be symptoms. Perhaps as Lennox and Cobb suggest, it would be best for the medical profession to discontinue using the word

epilepsy and speak of "paroxysmal disorders" or "the convulsive states," at least until the physician can "search out the various contributing or precipitating factors which, in the individual patient, may make for seizures."

In the light of recent investigations it seems probable that in some cases the periodic attacks of convulsions and unconsciousness in epileptic patients may be manifestations of the hypoglycemia resulting from the spontaneous excessive secretion of insulin by the islet cells of the pancreas (hyperinsulinism). A number of cases reported by careful and capable clinicians, in which the diagnosis of epilepsy had been made, have been associated with hypoglycemia assumed to be due to hyperinsulinism, and in some of these cases the convulsions were controlled by dieting. In other cases of periodic epileptiform convulsions associated with hypoglycemia, adenomas of the pancreas were found at operation and their surgical removal resulted in clinical cures of patients who otherwise would have been doomed to live only a few months, or a few years, with the constant fear of epileptiform seizures hanging over them.

A recent study of three cases of typical epilepsy associated with marked degrees of hypoglycemia suggests that hyperinsulinism may be one of the precipitating factors in the etiology of a distinctive type of grand mal and petit mal, which might be termed insulogenic epilepsy. In other words, the hypoglycemia in such cases may be "the trigger" that sets off the epileptic "explosion" in a person who has the constitutional convulsive tendency. It might be better to discontinue the use of the word epilepsy altogether in such cases and classify the cases as being due to hyperinsulinism, a disease of the pancreas.

If the hypoglycemia due to hyperinsulinism is proved to be a factor in the periodic attacks of convulsions in a group of cases now classified as idiopathic epilepsy, with the application of our present knowledge of the dietary management of hyperinsulinism, it seems probable that this type of epilepsy, unless associated with neoplasms of the pancreas, may be controlled by a diet that will maintain the patient's blood sugar level at a point high enough to prevent the seizures. The fact that a number of persons who had periodic attacks of convulsions some of which were thought to have been epileptic seizures until hyperinsulinism was diagnosed, have been cured by the removal of adenomas involving the islet cells of the pancreas should bring hope to the patient who has periodic attacks of convulsions associated with hypoglycemia of pancreatic origin which cannot be controlled by dieting.

### HYPOGLYCEMIC CONVULSIONS CAUSED BY ADMINISTRATION OF INSULIN (INDUCED HYPERINSULINISM)

Attacks of convulsions and unconsciousness with spontaneous recovery, resembling epilepsy, have been reported as having been brought on both accidentally and experimentally, by overdoses of insulin (induced hyperinsulinism). Accidents with insulin, however, are exceedingly rare when used by clinicians experienced in treating diabetes. Joslin<sup>4</sup> reports only two such cases in his large experience in the treatment of diabetes and he must have had many insulin reactions with varying degrees of hypoglycemia. Herold<sup>5</sup> reports the case of a diabetic ex-soldier, who, before he came

<sup>1</sup> Lennox W. C. and Cobb S. *Epilepsy & Medicine* 7: 105 290 (May 1935)  
<sup>2</sup> Berland W. A. and Miller E. C. L. *English in American Medical Dictionary* 10 Philadelphia W. B. Saunders Company 1935  
<sup>3</sup> Bates Block S. *English in Texts Practice of Medicine* Hagerstown M. D. W. C. Price Co. 10 401-411

<sup>4</sup> Joslin E. P. *Diabetes Mellitus* Philadelphia Lea & Febiger 1928  
<sup>5</sup> Herold A. L. Personal communication to the author

under Herold's care, had attacks of convulsions every evening after a third daily dose of insulin. The attacks had been diagnosed as "epilepsy." The patient would sleep several hours after the attacks and recover spontaneously. His fasting blood sugar was 0.290 per cent. He was given the same amount of insulin and the same diet that he had been getting before he came under Herold's observation. His noon blood sugar, before lunch, was 0.130 per cent. At 4 p. m., four hours after his noon meal and his midday insulin, his blood sugar was reduced to 0.056 per cent. Two hours after his evening meal and insulin his blood sugar concentration dropped to 0.028 per cent, when he was given orange juice and later milk, and the usual evening "epilepsy" seizure was prevented. Herold adjusted the diet and the insulin dosage to meet the patient's needs and thus cured his "epilepsy."

Lennox and Cobb<sup>1</sup> report the case of an epileptic person, "a severe diabetic whose first convulsion followed an overdose of insulin." On seven occasions the patient was given large doses of insulin with depression of blood sugar to below 50 mg, accompanied by hypoglycemic reaction. On two occasions, when blood sugar was at its lowest point, the patient had a generalized convulsion, and on another occasion, when blood sugar was only 25 mg, he was mentally confused but had no convulsion. On other occasions he had convulsions not related to insulin injections when the concentration of blood sugar was normal.

These cases prove that induced hyperinsulinism resulting in hypoglycemia may cause convulsions, followed by unconsciousness, with spontaneous recovery very similar to the epileptic attacks of grand mal. It surely seems reasonable to assume that the spontaneous excessive secretion of insulin by the islet cells of the pancreas resulting in hypoglycemia may produce epileptic fits in individuals who have the constitutional convulsive tendency. The case of Lennox and Cobb<sup>1</sup> confirms the observation of John<sup>6</sup> that the blood sugar level in insulin reactions varies, not only in different patients but in the same patient at different times.

The fact that epilepsy is so rare among diabetic patients suggests that the hyperglycemia in them (hypo-insulinism) may be incompatible with attacks of petit mal and grand mal. Joslin<sup>4</sup> states that "no clear-cut case [of epilepsy] can be found among 6,000 glycosurias, of whom 5,086 are true diabetics." He mentions two cases in which there were epileptiform convulsions in which the diagnosis of epilepsy was doubtful. Apparently the hyperglycemia and acidosis in diabetes are associated very infrequently with convulsions. On the other hand, hypoglycemia in fasting epileptic children was noted by Shaw and Moriarty<sup>7</sup> and others, though none of them suggested that the hypoglycemia was due to hyperinsulinism.

#### RECURRING ATTACKS OF CONVULSIONS DUE TO SPONTANEOUS HYPERINSULINISM

Since I<sup>8</sup> reported the first cases of hyperinsulinism in 1923 and 1924 about fifty cases have been added to the literature on the subject<sup>9</sup>. In twelve of the severe cases of hyperinsulinism reported by different clinicians,

attacks of unconsciousness and convulsions were the predominating symptoms. Several of these cases had been considered as epilepsy until they were either proved, or assumed, to be due to hyperinsulinism, whereupon the diagnosis of grand mal was discarded. It will be noted in the following brief review of these cases that some of the patients had many attacks of petit mal in addition to the paroxysms of convulsions and unconsciousness.

In 1927, Allan<sup>10</sup> reported the case of a physician, aged 40, who had recurring attacks of convulsions and unconsciousness (blood sugar 0.030 per cent). An exploratory operation revealed an inoperable neoplasm of the pancreas with metastases of the liver. The patient died a month later. Necropsy confirmed the surgical observations of carcinoma of the pancreas with metastatic nodules of the liver. Microscopic sections of the tumor and nodules of the liver showed distinct resemblance to the islet cells of the pancreas. An extract from the tumor and the metastatic nodules showed insulin activity when injected into rabbits. Wilder, Allan, Power and Robertson<sup>11</sup> later published an exhaustive pathologic and clinical report of this case with a general discussion on hypoglycemia and hyperinsulinism. This is the first reported case of convulsions due to pathologically proved hyperinsulinism. In 1928, Allan<sup>12</sup> reported two more cases of hyperinsulinism in adults who had attacks of weakness, stupor and convulsions with marked hypoglycemia. In one, an exploratory operation was performed by Judd<sup>13</sup>. The pancreas appeared normal, but the tail and a part of the body was resected. The patient was improved by the operation, but milder attacks of hypoglycemia continued.

Thalheimer and Murphy<sup>14</sup> reported the case of a woman who had recurring attacks of somnolence and "epileptiform attacks", i. e., convulsions and unconsciousness (blood sugar 0.033 per cent). The patient died in coma. Necropsy revealed a small tumor, 1 by 1.5 cm., in the body of the pancreas, which proved to be a primary carcinoma of the islands of Langerhans. McClenahan and Norris<sup>15</sup> reported the case of a Negro who had periodic lapses of memory, each lasting an hour or more, not unlike those of petit mal (blood sugar 0.040 per cent). The attacks could be prevented by giving food. He died of bronchopneumonia, and necropsy revealed an adenoma of the pancreas. Hartman<sup>16</sup> and Jonas<sup>17</sup> reported the case of a Negro, aged 50, who said "If I do not eat every two hours I have a spell and lose my mind." His blood sugar was 0.043 per cent. The patient later went to the state institution for epileptic patients and died there, presumably in a hypoglycemic attack. Autopsy was not performed. The Finneys<sup>18</sup>, in 1928, reported the first successful resection of a large portion of the pancreas for hyperinsulinism. A woman, aged 53, referred by Sprunt and

6 John H. J. The Lack of Uniformity in the Insulin Reaction. *Am. J. M. Sc.* 172: 96 (July) 1926.  
7 Shaw E. B., and Moriarty, Margaret E. Hypoglycemia and Acidosis in Fasting Children with Idiopathic Epilepsy. *Am. J. Dis. Child.* 28: 553-567 (Nov.) 1924.  
8 Harris Seale. (a) The Etiology and Prevention of Diabetes. *Virginia M. A. Monthly* 50: 672 (Jan.) 1924. (b) Hyperinsulinism and Dysinsulinism. *J. A. M. A.* 83: 729 (Sept. 6) 1924.  
9 Harris Seale. Hyperinsulinism. Review of Cases Reported in United States and Canada. *Endocrinology* 16: 29-42 (Jan. Feb.) 1932.

10 Allan F. N. Carcinoma of the Islands of Pancreas with Hyperinsulinism. *Proc. Staff Meet. Mayo Clin.* 2: 89 (April 27) 1927.

11 Wilder R. M., Allan F. N., Power M. H., and Robertson, H. F. Carcinoma of the Islands of the Pancreas. Hyperinsulinism and Hypoglycemia. *J. A. M. A.* 89: 348 (July 30) 1927.

12 Allan F. N. Hyperinsulinism. *Proc. Staff Meet. Mayo Clin.* 3: 367 (Dec. 19) 1928.

13 Allan, F. N., Boeck W. C., and Judd E. S. The Surgical Treatment of Hyperinsulinism. *J. A. M. A.* 94: 1116 (April 12) 1930.

14 Thalheimer William and Murphy F. D. Carcinoma of the Pancreas. Hyperinsulinism and Hypoglycemia. *J. A. M. A.* 91: 89 (July 14) 1928.

15 McClenahan W. U. and Norris W. G. Pancreatic Adenoma with Hypoglycemia. *Am. J. M. Sc.* 177: 93 (Jan.) 1929.

16 Hartman F. L. Hypoglycemia. *M. Clin. North America* 12: 1033 (Jan.) 1929.

17 Jonas Leon. Hypoglycemia. *M. Clin. North America* 8: 949 (Nov.) 1924.

18 Finney J. M. T. and Finney J. M. T., Jr. Resection of the Pancreas. *Ann. Surg.* 88: 584 (Sept.) 1928.

Barker, complained of "spells of confusion, with mental lapses and strange behavior" (blood sugar 0.030 per cent). Blood sugar readings have been higher since the operation, but she has continued to have some attacks, which are thought to be psychogenic in character.

The first case of dysinsulinism, associated with periodic attacks of convulsions and unconsciousness, in which the diagnosis of a probable adenoma of the pancreas was made and the patient clinically cured by operation was reported by Howland, Campbell, Maltby and Robinson.<sup>19</sup> A woman, aged 52, had attacks of coma and convulsions over a period of six years. The blood sugar was 0.040 per cent. A dextrose tolerance test showed a diabetic curve. In addition to the headaches, convulsions and unconsciousness, this patient had many minor attacks not unlike those of petit mal. Neilson and Eggleston<sup>20</sup> reported three cases of "functional dysinsulinism seizures" which they called "epileptiform convulsions." One of these patients also had many attacks of petit mal. Blood sugar readings in the three patients were, respectively, 0.050, 0.069 and 0.064 per cent. The attacks were controlled by dieting, with frequent feedings. Suprarenal gland substance was also given in the three cases. Neilson and Eggleston tried the same treatment in "idiopathic epilepsy" without beneficial results.

Carr, Parker, Grave, Fisher and Larrimore,<sup>21</sup> in April, 1931, reported the case of a boy, aged 19, who had recurring periods of unconsciousness accompanied by profuse perspiration, slight cyanosis and, at times, spasmodic muscular movements (blood sugar 0.040 per cent). The diagnosis of epilepsy had been made before he was admitted to the hospital. An exploratory operation revealed a tumor of the pancreas, about 2 cm in diameter, which proved to be a beta-cell adenoma. The patient recovered promptly from the operation and has had no more hypoglycemic attacks.

Weil<sup>22</sup> made a thorough study of a case of hyperinsulinism in a woman aged 29 who had recurring attacks of unconsciousness and convulsions that came on only before or during her menstrual periods (blood sugar 0.037 per cent). On a low carbohydrate, high fat diet this patient has not had convulsions in over a year. Recent blood sugar readings are about normal, the last two reported having been 0.090 and 0.083 per cent. This case had been diagnosed as epilepsy before it was studied by Weil. McGavern<sup>23</sup> reports the case of a man, aged 44, with the history of attacks of amnesia and unconsciousness, associated with tonic and clonic muscular spasms and stertorous breathing. The diagnosis of 'epileptic equivalent' had been made in a large clinic. The blood sugar of the patient while in coma was 0.030 per cent. The attacks always came on in the mornings. Carbohydrate given every hour during the forenoon has controlled the attacks over a period of eighteen months.

Womack, Gnani and Graham's<sup>24</sup> patient, cured clinically by the removal of a small adenoma of the islet

tissue of the pancreas, had hypoglycemic attacks characterized by mental confusion and periods of unconsciousness. At a clinic, a diagnosis of probable brain tumor was made. At another clinic the appendix and gallbladder had been removed. Harris, Taylor, Graham and Chilton<sup>25</sup> recently studied a case of recurring and prolonged attacks of unconsciousness (narcolepsy) which could not be controlled by dieting, in which death seemed imminent (blood sugar 0.050 per cent). The hypoglycemic symptoms were relieved by resection of about one half of the tail and body of the pancreas. For three weeks after operation, fasting blood sugar readings averaged 0.100 per cent.

It will be noted that of the reported American cases of hyperinsulinism associated with attacks of unconsciousness, with and without convulsions, five were controlled by dieting, three were cured clinically by removal of adenomas of the pancreas, three were unimproved, and two ended fatally. The facts that adenoma of the islet tissue of the pancreas is associated with hyperinsulinism and that its removal relieves the symptoms suggest the analogy of hyperthyroidism due to toxic adenoma of the thyroid.

#### TRUE EPILEPSY ASSOCIATED WITH HYPERINSULINISM

The following report of three cases, giving only the salient facts in each added to the clinical observations of others, includes data which seem to indicate that hyperinsulinism may be one of the factors in the etiology of epilepsy.

**CASE 1—History**—A white youth, aged 17, a college student, at the time he was first examined, Aug 21, 1930, had had three attacks of unconsciousness. He would first lose the power of speech, and in half a minute become unconscious. In the first attack, June 20, and the second August 10, unconsciousness lasted about thirty minutes. Afterward he felt drowsy, at intervals between the attacks he felt well. Later in August he had a third seizure, which was of typical epileptic character. In this attack he had definite opisthotonos with convulsive movements of the arms and legs.

The family history and previous illnesses have no bearing on epilepsy.

The patient is a large eater, he eats rapidly and excessively of beef, pork, eggs, sweets and bread. He has two cups of coffee a day and four glasses of a soft drink containing caffeine. He smokes twenty cigarettes daily.

**Examination**—Physical examination was negative. The patient is 6 feet (183 cm) tall and weighs 165 pounds (75 Kg). He has a fine physique.

Laboratory examinations of the urine and the blood were negative. The Wassermann reaction of the blood was negative. The fasting blood sugar, before breakfast, August 22, was 0.060 per cent, September 2, it was 0.062 per cent at noon, before luncheon.

The possibility of brain tumor was considered but ruled out because the roentgenograms of the skull were negative, and there was no choked disk or any other evidences of intracranial neoplasm.

The diagnosis was epilepsy associated with hyperinsulinism.

**Treatment and Course**—The patient was placed on a ketogenic diet of 10 Gm of carbohydrates, 60 Gm of protein and 200 Gm of fat. On his return to his home he soon became tired of the dietary restrictions and went back to his old habit of eating what he cared for and taking the soft drinks containing caffeine. After indiscretions in eating he had several other epileptic seizures. His mother, finding it impossible to keep him on the diet and having received glowing accounts of a quack epilepsy cure abandoned all efforts at dieting and gave him a "patent medicine."

<sup>25</sup> Harris, Seale, Taylor, A. S., Graham, G. S. and Chilton, D. H. Narcolepsy associated with Hyperinsulinism: preliminary report of case later in this article.

<sup>19</sup> Howland, Goldwin, Campbell, W. R., Maltby, E. I. and Robinson, W. I. Dysinsulinism: Convulsions and Coma Due to Islet Cell Tumor of the Pancreas with Operation and Cure. *J. A. M. A.* 93: 674 (Aug. 31) 1930.

<sup>20</sup> Neilson, I. M. and Eggleston, E. L. Functional Dysinsulinism with Epileptiform Seizure: Treatment. *J. A. M. A.* 94: 860 (March 22) 1930.

<sup>21</sup> Carr, A. D., Barker, Robert, Grave, Edward, Fisher, A. D. and Larrimore, I. W. Hyperinsulinism from B-Cell Adenoma of the Pancreas: Operation and Cure. *J. A. M. A.* 96: 1363 (April 25) 1931.

<sup>22</sup> Weil, Clarence. Personal communication to the author.

<sup>23</sup> McGavern, B. F. Epileptoid Attacks and Hyperinsulinism. *Endocrinology* 16: 29 (May-June) 1932.

<sup>24</sup> Womack, A. A., Gnani, W. B. Jr. and Graham, E. A. Adenoma of the Islet of Langerhans with Hypoglycemia: Successful Operative Removal. *J. A. M. A.* 97: 1111 (Sept. 19) 1932.



This "patent medicine" was recently analyzed by the Council on Pharmacy and Chemistry of the American Medical Association,<sup>20</sup> and the amount prescribed for a day was found to contain the equivalent of 56 grains (3.6 Gm.) of potassium bromide. This preparation controlled the attacks, but evidently the bromide was showing its degenerative effects, because a year later the mother stated that the patient had become almost incorrigible, that he could not be controlled in his diet and habits, and that she and his father were greatly distressed because of the irregularities of his conduct. May 9, 1932, he returned for reexamination, reporting that his attacks of convulsions were becoming more frequent and more severe in spite of the fact that he was using a proprietary preparation of phenobarbital regularly. His fasting blood sugar and carbohydrate tolerance test are given in table 1.

This patient was placed on a low carbohydrate, high fat diet, approximating 100 Gm. of carbohydrate, 75 Gm. of protein and 210 Gm. of fat, in which is included one or two hour feedings between meals and until he retires at night. Since he has demonstrated that he is careless in carrying out his diet he was given 1½ grains (0.1 Gm.) of phenobarbital after breakfast and supper

TABLE 1—Fasting Blood Sugar and Carbohydrate Tolerance Test in Case 1

	Blood Sugar
Fasting	0.050 per cent
1 hour after 100 Gm. of dextrose	0.090 per cent
2 hours after 100 Gm. of dextrose	0.066 per cent
3 hours after 100 Gm. of dextrose	0.050 per cent
4 hours after 100 Gm. of dextrose	0.050 per cent
5 hours after 100 Gm. of dextrose	0.050 per cent

The blood sugar curve and fasting blood sugar readings show that this patient has severe hyperinsulinism. If his grand mal seizures are not controlled by diet, an exploratory operation will be advised. If an adenoma is found it will be removed but, if not, the resection of a large part of the body and tail of the pancreas will be advised with the hope that the number of islet cells may be reduced to the point at which about the normal amount of insulin will be secreted.

CASE 2—History—A white man, aged 26, a teacher who had received his master's degree in a well known American university, was in perfect health, except that he had recurring attacks of convulsions, at the time of the initial examination during December, 1931. The first attack took place at the breakfast table just as he sat down to eat. He was unconscious for a few minutes, but he went to school and taught his classes during the day. The second attack was in August,

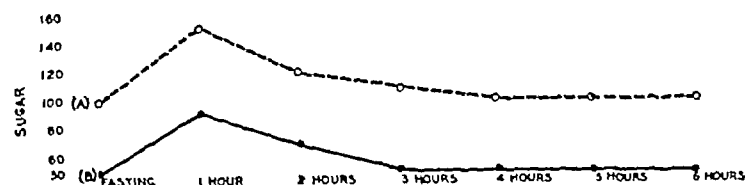


Chart 1 (case 1)—Epilepsy and hyperinsulinism. A, average normal blood sugar curve after dextrose tolerance test (100 Gm. of dextrose). B, low flat blood sugar curve in epileptic patient with hyperinsulinism. In the charts the sugar is given in milligrams per hundred cubic centimeters of blood.

between 11 and 12 o'clock at night. He fell while studying in his room. There were slight injuries to his head from striking a bookcase as he was falling. He bit his tongue. The third attack came on October 1, about 11 p. m., four or five hours after he had eaten. The last attack was about December 15, about midnight, in his room. He fell out of his chair, while he was unconscious his toe was burned in an open grate.

The family history and previous illnesses were negative. Physical examination was negative. He was 5 feet 9 inches

(175 cm.) tall and weighed 181 pounds (82 Kg.). The Wassermann test of the blood was negative. The fasting blood sugar and carbohydrate tolerance test are shown in table 2.

It will be noted that the patient had a typical hyperinsulinism dextrose tolerance curve. Four hours after the ingestion of 100 Gm. of dextrose, when the blood sugar was 0.060 per

TABLE 2—Fasting Blood Sugar and Carbohydrate Tolerance Test in Case 2

	Blood Sugar
Fasting	0.065 per cent
1 hour after 100 Gm. of dextrose	0.112 per cent
2 hours after 100 Gm. of dextrose	0.080 per cent
3 hours after 100 Gm. of dextrose	0.065 per cent
4 hours after 100 Gm. of dextrose	0.060 per cent
5 hours after 100 Gm. of dextrose	0.060 per cent

cent, he became so weak that he had to go to bed. The laboratory technician gave him a cup of coffee, which relieved his weakness but did not affect his blood sugar, as at the last hour it was 0.060 per cent. One week later a second dextrose tolerance test was given, with practically the same results as the first (table 3).

Treatment and Course—The patient was given no medicines but was placed on a low carbohydrate, moderate fat and normal protein diet, with orange juice on awakening in the morning, every two hours between meals and when awake at night. He has followed this diet only fairly well, with the result that he has had only two attacks in six months. His fasting blood sugar, June 23, 1932, was 0.065 per cent at 10 a. m., and at 2 p. m. (fasting) 0.060 per cent.

#### DO THE BROMIDES INHIBIT THE SECRETION OF INSULIN?

The rationale of the bromides in epilepsy is considered to be its effect as a motor depressant, thus preventing the convulsions, but an experience with our first epileptic case, in which hypoglycemia of assumed

TABLE 3—Results of Second Test in Case 2

	Blood Sugar
Fasting	0.065 per cent
1 hour after 100 Gm. of dextrose	0.110 per cent
2 hours after 100 Gm. of dextrose	0.080 per cent
3 hours after 100 Gm. of dextrose	0.068 per cent
4 hours after 100 Gm. of dextrose	0.060 per cent
5 hours after 100 Gm. of dextrose	0.060 per cent

pancreatic origin was found, made us think it possible that the bromides might have some effect in reducing the secretion of insulin, thus maintaining the blood sugar at a level above which hypoglycemic convulsions occur.

Since two dextrose tolerance tests had shown practically the same hyperinsulinism blood sugar curve in case 2, it was decided to see what effect the bromides would have on the hypoglycemia. At bedtime the night after his second dextrose tolerance test the patient was given 20 grains (1.3 Gm.) of strontium bromide, and the following morning at 7 o'clock, one hour before the fasting blood sugar was taken, he was given a second dose of the same amount, and at 10 a. m. he was given the third dose. The blood sugar readings throughout the test after the bromides were taken were from 5 to 20 mg. per hundred cubic centimeters of blood higher than after the two former tests. The blood sugar readings after the bromides had been taken are given in table 4.

One such test does not prove that the bromides will raise the blood sugar level in all epileptic patients who have hyperinsulinism but it is suggestive. The bromides are said to reduce the secretion of hydrochloric acid in the stomach so that it seems reasonable to assume that it might affect the secretion of insulin by the islet cells of the pancreas. Of course, if the

blood sugar concentration can be maintained by diet at a level above the point at which convulsions occur it is much better than giving the bromides, which seem to affect the secretion not only of the pancreas but of other organs and has a decidedly deteriorating effect on the mind. The bromides may be useful temporarily by epileptic patients with hyperinsulinism who cannot, or will not, carry out dietary instructions, but the bromism that follows the use of bromides, when used over a long period of time, may be more harmful to the epileptic patient than the convulsions.

**CASE 3—History**—A white youth, aged 18, a high school student, examined April 18, 1932, had for the past nine years had periodic attacks of what he called headaches, which he described as follows: "Everything blurs before my eyes and I feel weak, drowsy and hungry." He did not become unconscious but lay down and slept for from five to forty-five minutes. He awakened feeling well. He was usually hungry and often ate on awakening. Attacks occurred most frequently about 3 p. m., three hours after dinner. He had had them

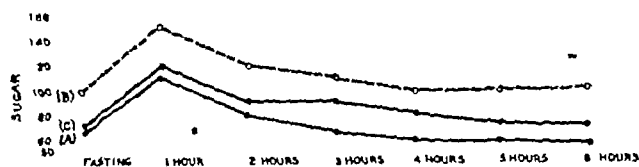


Chart 2 (case 2)—Epilepsy and hyperinsulinism. A typical hyperinsulinism blood sugar curve. B normal blood sugar curve. C elevated blood sugar curve after administration of average daily dose of bromides used in the treatment of epilepsy.

before supper. At first, the attacks were not severe and occurred at intervals of about every two weeks. The attacks gradually increased in frequency and severity until they occurred two or three times a day. May 30, 1931, his mother found him unconscious in bed, about 7 a. m., before breakfast. He became conscious in about half an hour. He rested in bed until noon and felt better after eating dinner. He had no more attacks until March 3, 1932, about 9:30 p. m., about three and a half hours after supper. He was in bed asleep when his loud breathing attracted the attention of his mother. He "frothed at the mouth" and his "muscles jerked all over." He became conscious in about half an hour and felt well the next morning. The third attack occurred, April 10, about 10:30 p. m., four and a half hours after supper. There was stertorous breathing, the mouth frothed and the muscles jerked all over. He became conscious in half an hour.

The family history and previous illnesses have no bearing on epilepsy.

**Examination**—Physical examination was negative. His height was 5 feet 11 inches (180 cm), his weight, 169 pounds (77 kg). He has a fine physique.

TABLE 4—Blood Sugar After Bromides in Case 2

	Blood Sugar
Fasting	0.070 per cent
1 hour after 100 Gm of dextrose	0.118 per cent
2 hours after 100 Gm of dextrose	0.090 per cent
3 hours after 100 Gm of dextrose	0.088 per cent
4 hours after 100 Gm of dextrose	0.080 per cent
5 hours after 100 Gm of dextrose	0.075 per cent

Laboratory examination of the urine was negative. The Wassermann reaction of the blood was negative. The blood sugar three hours after a huge breakfast, consisting largely of carbohydrates, was 0.075 per cent. One hour later his blood sugar was 0.060 per cent. He was then given 100 Gm of dextrose in water. The hourly blood sugar readings are given in table 5.

**Treatment and Results**—The patient was kept under observation in the hospital for two weeks. He was given no medicine of any kind but was placed on a diet of 75 Gm of carbohydrate, 75 Gm of proteins and 240 Gm of fat a day, including cream and orange juice every two hours between meals. Since he had

had one attack at 5 a. m., he was given food at 4 a. m. He was taught to weigh and measure his food and to calculate his menus. The petit mal attacks have been reduced in frequency and severity—almost controlled—and he has had three convulsions since he has been on the diet. His fasting blood

TABLE 5—Hourly Blood Sugar Readings in Case 3

	Blood Sugar
Fasting	0.060 per cent
1 hour after 100 Gm of dextrose	0.080 per cent
2 hours after 100 Gm of dextrose	0.060 per cent
3 hours after 100 Gm of dextrose	0.060 per cent
4 hours after 100 Gm of dextrose	0.060 per cent

sugar readings one month after he had been on the diet was 0.080 per cent. Another dextrose tolerance test was made, June 27 (table 6).

#### NARCOLEPSY AND HYPERINSULINISM

Narcolepsy, or "sleep epilepsy" as it has been called, is characterized by paroxysmal attacks of somnolence and unconsciousness without convulsions. The underlying and precipitating causes of narcolepsy constitute as much of an unsolved problem as is the genesis of idiopathic epilepsy. It is probable that there are as many etiologic factors that may be involved in the production of narcolepsy as there are in epilepsy, the difference being that in "sleep epilepsy" the victim has not the constitutional convulsive tendency but has recurring attacks of unconsciousness without the grand mal seizures. Narcolepsy, like epilepsy, probably is not a disease entity but is a symptom of many different diseases.

Gelineau<sup>27</sup> first described a syndrome consisting of attacks of somnolence or unconsciousness, associated with cataplexy, which he called narcolepsy. Later the

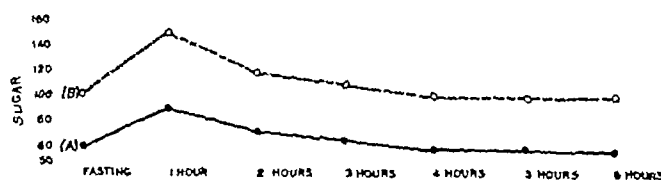


Chart 3 (case 3)—Epilepsy and hyperinsulinism. A typical hyperinsulinism blood sugar curve. B normal blood sugar curve.

syndrome has been called Gelineau's narcolepsy. While narcolepsy is a relatively rare condition, a number of cases have been reported and several excellent articles on the subject have appeared in the literature, among which may be mentioned those by Levin,<sup>28</sup> Cave,<sup>29</sup> Weech,<sup>30</sup> Richter,<sup>31</sup> Freeman,<sup>32</sup> Doyle and Daniels,<sup>33</sup> Wahl,<sup>34</sup> Wagner,<sup>35</sup> Collins,<sup>36</sup> Brittingham and Rogers,<sup>37</sup> Spiller,<sup>38</sup> Thrash and Massee,<sup>39</sup> and Jelliffe.<sup>40</sup> There

27 Gelineau. De la narcolepsie. *Gaz. d. hop.* 57: 626 1880.

28 Levin. Max. Narcolepsy (Gelineau's Syndrome) and Other Varieties of Morbid Somnolence. *Arch. Neurol. & Psychiat.* 22: 1172 1200 (Dec.) 1929.

29 Cave. H. A. Narcolepsy. *Arch. Neurol. & Psychiat.* 26: 50 101 (July) 1931.

30 Weech. A. A. Narcolepsy. A Symptom Complex. *Am. J. Dis. Child.* 32: 672 681 (Nov.) 1926.

31 Richter. C. P. Pathologic Sleep and Similar Conditions. *Arch. Neurol. & Psychiat.* 21: 363 375 (Feb.) 1929.

32 Freeman. Walter. Pathologic Sleep. *J. A. M. A.* 91: 67 70 (July 14) 1928.

33 Doyle. J. B. and Daniels. L. E. Symptomatic Treatment for Narcolepsy. *J. A. M. A.* 96: 1370 1372 (April 25) 1931.

34 Wahl. E. F. Narcolepsy. *South. M. J.* 24: 169 170 (Feb.) 1931.

35 Wagner. C. P. Comment on the Mechanism of Narcolepsy. *1. Nerv. Ment. Dis.* 72: 405 416 (Oct.) 1930.

36 Collins. H. A. Ephedrine in the Treatment of Narcolepsy. *Ann. Int. Med.* 5: 1289 1293 (April) 1932.

37 Brittingham. J. W. and Rogers. T. E. Narcolepsy—Report of Case with Symptomatic Relief. *J. M. A. Georgia.* 21: 142 143 (April) 1932.

38 Spiller. W. G. Narcolepsy Occasionally a Postencephalitic Syndrome. *J. A. M. A.* 86: 73 74 (March 6) 1926.

39 Thrash. E. C. and Massee. J. C. Narcolepsy. *J. A. M. A.* 91: 1502 1503 (Dec. 8) 1928.

40 Jelliffe. S. E. Narcolepsy Hypnolepsy Pyknolepsy. *M. J. & Rec.* 120: 313 315 (March 6) 1929.

is a difference of opinion among neurologists as to the existence of idiopathic narcolepsy and as to the syndrome on which the diagnosis is based, but Gelman's syndrome is generally accepted as descriptive of the typical case of narcolepsy. However, a number of

TABLE 6—Dextrose Tolerance in Case 3, June 27

Fasting	0.060 per cent
1 hour after 100 Gm of dextrose	0.090 per cent
2 hours after 100 Gm of dextrose	0.075 per cent
3 hours after 100 Gm of dextrose	0.065 per cent
4 hours after 100 Gm of dextrose	0.050 per cent
5 hours after 100 Gm of dextrose	0.050 per cent
6 hours after 100 Gm of dextrose	0.050 per cent

cases of recurring attacks of drowsiness and unconsciousness, in which muscular rigidity from emotional disturbances (cataplexy) was not present, have been reported as narcolepsy.

A recent case of recurring attacks of unconscious-

ness, without convulsions, associated with hypoglycemia of pancreatic origin, suggests that in some cases narcolepsy may be a manifestation of hyperinsulinism.

The dramatic recovery of this patient following a partial

resection of the body and tail of the pancreas when all other efforts of treatment, including careful dietary

management, had failed and death seemed imminent,

brings the hope that there may be other cases of nar-

colepsy associated with insulinogenic hypoglycemia that

may be amenable to control, or cure, by dietary mea-

sures, or by surgery.

CASE 4—History.—A white man, aged 20, brought to the

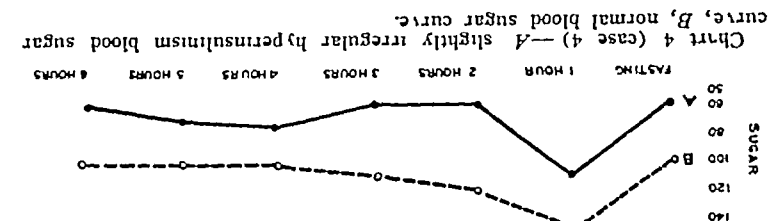
hospital, July 1, 1932, referred by Dr. D. H. Chilton of Parrish,

Ala., complained of weakness, hunger ("could eat a full meal

and be hungry in an hour"), pain in the abdomen, and

"sleeping spells," when he would be unconscious for several

hours at a time.



The present illness began two years before when, without

any cause that could be discovered, he "got sleepy and fell

down" while working in a mine. He was unconscious for about

three hours. Following this attack he had vague abdominal

pains and was operated on for appendicitis, from which he

made an uneventful recovery. About two months later he

"went to sleep" again while working in the mines and was

unconscious for several hours. He then felt well for more

than a year, except that he would have "hungry weak spells"

His meals did not satisfy him, but he had no more attacks of

unconsciousness until March, 1932, when he "got sleepy" one

afternoon while on a visit to a neighbor and remained uncon-

scious for an hour. Following this attack, he had abdominal

pains at irregular intervals, which were suspected as being

symptoms of duodenal ulcer or gallbladder infection. Pains

were irregular and not related to meals, though he usually felt

better after eating. He was weak and unable to work. The

"weak and hungry spells" continued June 28, about three

hours after breakfast he "got sleepy" and was unconscious

for two hours. He felt better after eating honey with his

supper and breakfast. He had abdominal pains and ate no

dinner, but at 4 p. m. he took a cup of milk and cornflakes. He

felt better for an hour but then went into a profound coma

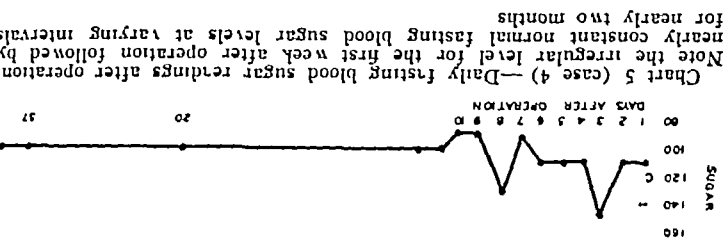


Chart 5 (case 4)—Daily fasting blood sugar readings after operation

Note the irregular level for the first week after operation followed by

nearly constant normal fasting blood sugar levels at varying intervals

for nearly two months.

July 23. He was drowsy and his blood sugar was 0.066 per

cent, though he had eaten a full breakfast two hours before

Suspecting a pancreatic lesion, probably an adenoma (insulinoma),

we decided on an exploratory laparotomy, July 25, the operation

was performed by Dr. Adrian S. Taylor, assisted by Dr. H. L.

Chaves and Dr. Thomas Wolford.

Operation and Results.—The exploration, under tribrom-

ethanol and ether anesthesia, revealed no pathologic changes of

the duodenum, gallbladder, kidneys, suprarenal glands or other

abdominal viscera, except adhesions of the posterior surface

of the stomach to the peritoneum forming the posterior wall

of the lesser sac. The pancreas was reddened but otherwise

normal in appearance. About half the pancreas (body and

tail) was resected, and the cut edges were secured with a

diathermy needle. The incision was closed, without drainage

The operative recovery was uneventful, except that about one

week after operation his temperature rose to 101 F., when a

small hematoma in the abdominal wound was opened and

drained. He left the hospital in three weeks.

The blood sugar readings after operation have been about

normal, as shown in chart 5.

Subsequent History.—The patient has had no tendency to

somnolence or to the "sleeping spells," though he has had three

meals a day and nothing between meals. His fasting blood sugar

two months after the operation was 0.100 per cent.<sup>41</sup>

Comment.—Sufficient time has not elapsed since the operation

to determine whether or not this patient has been permanently

cured of hyperinsulinism. The fact that his blood sugar has

41 This case will be reported in detail at a later date by Drs. S. C. Harris, Adrian S. Taylor, George S. Graham and D. H. Chilton.

been normal and the hypoglycemic symptoms have not recurred in two months after operation give reason to hope for a permanent cure of the hyperinsulinism in this case

#### THE DIAGNOSIS OF HYPERINSULINISM

While some of the recurring attacks of grand mal and petit mal associated with hypoglycemia in epileptic patients may be due to the excessive secretion of insulin by the pancreas, in making a diagnosis of hyperinsulinism it should be remembered that hypoglycemic convulsions can occur from dysfunction of various other organs of internal secretion that play a part in carbohydrate metabolism. In reporting my first series of cases of hyperinsulinism in 1924, I stated in the conclusion<sup>40</sup>

Since blood pressure readings have been low in all except two of the nondiabetic patients who have had symptoms of hypoglycemia, it seems possible that hypo-adrenalism may be associated with hyperinsulinism. It also seems probable that secretory disorders of the islands of Langerhans may be associated with dysfunctions of the thyroid, the pituitary bodies and other organs of internal secretion.

Cases of marked degrees of hypoglycemia due to organic diseases, or functional disturbance of other organs besides the pancreas have been reported as having been due to (a) deficient glycogenesis in the liver, either from poisons such as arsphenamine or other arsenicals, phenylhydrazine, phosphorus or other hepatotoxins (Cross and Blackford<sup>42</sup>), and from massive tumor of the liver (Nadler and Wolfer<sup>43</sup>), (b) inadequate mobilization of glycogen due to deficient secretion of the suprarenals, as in the case reported by Anderson,<sup>44</sup> in which the autopsy revealed an adenoma of the left suprarenal gland and in Addison's disease (Wadi<sup>45</sup>), (c) pituitary dysfunction (Cushing,<sup>46</sup> Wilder<sup>47</sup>), (d) thyroid disturbance (Zubiran<sup>48</sup>). Apparently ovarian dysfunction may be a factor in the etiology of hypoglycemic convulsions, as in the hyperinsulinism case of Weil.<sup>49</sup> A woman with very low blood sugar levels constantly and frequently had the symptoms of an insulin reaction between her catamenial periods but had convulsions only just before and during menstruation.

Every possible cause of hypoglycemia besides pancreatic disease should be considered, including studies of all the other organs of internal secretion, and excluding them as factors if possible, before making the diagnosis of hyperinsulinism in an epileptic or narcoleptic patient.

#### LOW CARBOHYDRATE, HIGH FAT DIETS IN HYPERINSULINISM

Early in my experience in dealing with hyperinsulinism I began using a low carbohydrate diet, consisting largely of 3, 5 and 10 per cent vegetables and fruits combined with a high proportion of fats, with frequent feedings. I reasoned that the carbohydrates in

the form of vegetables and fruits, which must be digested before being absorbed and metabolized, would be released as dextrose in small quantities at a time and, therefore, would not stimulate the secretion of insulin so much as meals made up largely of foods of high carbohydrate content, particularly those containing cane sugar products. Fats, particularly cream and milk, were given with meals and between meals, with the idea that they are emptied slowly from the stomach. Therefore, the assimilation of the carbohydrates mixed with fats would be slow compared to the rapid emptying of the stomach and the accelerated metabolism after the ingestion of carbohydrate meals without fats. Sheperdson<sup>50</sup> states that the blood sugar level will rise on a low carbohydrate diet, and he quotes Weeks, Renner, Allan and Wishart<sup>51</sup> as having observed in a study of epileptic patients on high fat diets that in every case they developed hyperglycemia.

The diet in each case of hyperinsulinism should be calculated to meet the patient's nutritional needs. The adult hyperinsulinism patient of average height and weight should have about 2,250 calories, 90 Gm of carbohydrates, 60 Gm of proteins and 180 Gm of fats, divided into from five to seven feedings a day. A number of my patients have been overweight, and other clinicians have observed a number of obese patients with hyperinsulinism. In such cases the fats should be reduced, and a low caloric diet with food every two hours is indicated. In such cases I prescribe a diet of about 90 Gm of carbohydrate, 60 Gm of fat and 60 Gm of protein (1,140 calories) divided into five or six feedings a day. On such a diet the patient's activities should be restricted, and the amount of fats should be increased to 90 or 100 Gm, or even more if the patient is losing more than 2 pounds (900 Gm) a week, or if he becomes weak.

In the underweight, asthenic hyperinsulinism patient a high fat diet of 90 Gm of carbohydrate, from 200 to 300 Gm of fat, and from 60 to 75 Gm of protein, divided into five or six feedings a day, will keep the blood sugar at a sufficiently high level to prevent hypoglycemic symptoms.

Careful blood sugar studies should be made on each patient for a few days after having been placed on a diet for hyperinsulinism, during which time the food should be weighed and measured. It is just as necessary to teach the hyperinsulinism patient food values, and to calculate and arrange the menus suited to his particular case, as it is to teach "diabetic arithmetic" to patients with hypo-insulinism (diabetes mellitus). The intelligent epileptic patient with hyperinsulinism usually becomes very much interested in "playing the game" of dieting because he has a holy dread of the paroxysms of convulsions.

It is essential to impress on the epileptic patient with hyperinsulinism the necessity for moderation in all things, particularly in physical exercise. Experiments on marathon runners show that physical exhaustion produces hypoglycemia (Levine, Gordon and Derick<sup>52</sup>). One of our epileptic patients observed that his attacks of both petit mal and grand mal occurred most frequently after or during strenuous games of baseball.

<sup>42</sup> Cross J. B. and Blackford L. M. Fatal Hepatogenic Hypoglycemia Following Neosarsphenamine. *J. A. M. A.* 94: 1739-1742 (May 31) 1930.

<sup>43</sup> Nadler, W. H. and Wolfer J. A. Hepatogenic Hypoglycemia Associated with Primary Liver Cell Carcinoma. *Arch. Int. Med.* 44: 700 (Nov.) 1929.

<sup>44</sup> Anderson H. B. A Tumor of the Adrenal Gland with Fatal Hypoglycemia. *Am. J. M. Sc.* 150: 1 (July) 1930.

<sup>45</sup> Wadi, W. Leber Hypoglykämie bei Morbus Addisonii. *Klin. Wchnschr.* 10: 281 (Oct. 28) 1928 cited by Cross and Blackford.

<sup>46</sup> Cushing, Harvey. The Pituitary Body and Its Disorders. Philadelphia J. B. Lippincott Company 1912.

<sup>47</sup> Wilder, R. C. A New Hypothesis in Disease Picture. *Hypophyseal Secretion Hypoglycemia Deutsche Zeitschrift für Neurologie* 112: 192-250 1933.

<sup>48</sup> Zubiran, S. A Case of Hypoglycemia. *Medicina Mexico* 66: 313 (April) 1922.

<sup>49</sup> Weil, Clarence. Diabetes Mellitus. Report of Case Associated with Cerebral Lesion. *Am. J. Med.* 1927.

<sup>50</sup> Sheperdson H. C. The Efficacy of High Fat Diets in the Treatment of Chronic Hypoglycemia. *Endocrinology* 82: 182 (March-April) 1932.

<sup>51</sup> Weeks D. F., Renner D. S., Allan F. A. and Wishart M. B. Fasting and Diets in the Treatment of Epilepsy. *J. Metab. Research* 3: 317 (Feb.) 1923.

<sup>52</sup> Levine S. A., Gordon Burgess and Derick C. L. Some Changes in the Chemical Constituents of the Blood Following a Marathon Race with Special Reference to Development of Hypoglycemia. *J. A. M. A.* 82: 1778 (May 31) 1924.

The epileptic patient with hyperinsulinism should be taught all the rules of personal hygiene adapted to his particular needs, just as the patient with severe diabetes is taught how to live and enjoy health even though he has the handicap of a crippled pancreas

#### CONCLUSIONS

1 Three cases of epilepsy and one case of narcolepsy associated with hyperinsulinism do not prove that there are types of epilepsy and narcolepsy due to the spontaneous hypersecretion of the islet cells of the pancreas but they do suggest a possible relationship. It therefore would seem advisable to make fasting blood sugar studies and dextrose tolerance tests on every patient who has recurring attacks of unconsciousness, with and without convulsions. Such studies on large groups of epileptic patients may determine if there is, or is not, a type of epilepsy of insulogenic character.

2 Up to this time, the patients who have had recurring attacks of convulsions and unconsciousness associated with hyperinsulinism have ranged in age from 17 to 57, about the same age incidence as in hyperthyroidism with and without adenoma of the thyroid. It therefore seems probable that if there is a distinct type of epilepsy associated with hyperinsulinism it will be found largely among young adults. However, hyperinsulinism is essentially a disease of the pancreas and, like hypo-insulinism (diabetes mellitus), it no doubt will be found also among children.

3 If there is a type of epilepsy associated with or due to functional hyperinsulinism, there is ample reason to believe that some such cases may be controlled by a low carbohydrate, high fat diet with frequent feedings, sufficient to maintain the blood sugar level at a point above which hypoglycemic convulsions occur.

4 A study of the blood sugar after the use of bromides in one case of epilepsy with an apparently fixed hyperinsulinism curve suggests that this drug may control the convulsions in epilepsy associated with hyperinsulinism by inhibiting the secretion of insulin, thus maintaining the blood sugar level above the point at which hypoglycemic convulsions occur. Bromides are not advised in the treatment of epilepsy associated with hyperinsulinism because of the harmful results of bromism, particularly when the same results may be obtained by dietary management, possibly combined with ephedrine, belladonna or phenobarbital.

5 Since a number of cases of recurring attacks of convulsions, associated with and without petit mal, have been proved to be due to insulinomas it seems probable that in some cases of epilepsy associated with hyperinsulinism adenomas of the pancreas may be found to be the cause of the convulsions, and such cases may be amenable to surgery. Pancreatic surgery for the relief of epilepsy or narcolepsy associated with hyperinsulinism should never be resorted to without ample blood sugar studies by a capable clinician, and only after a well directed effort has been made to control the convulsions by dietary and medical management.

6 In six operations on the pancreas for hyperinsulinism, three for removal of adenomas and three for partial resections, there was not a fatality. The excellent results of surgery for the relief of convulsions due to hyperinsulinism presage operations on the pancreas becoming more frequent, and it is predicted that surgeons in the future will learn from experience to estimate the amount of pancreatic tissue to resect in order to give relief from hyperinsulinism, as they have

done in the past in treating hyperthyroidism. Pancreatic surgery will always be difficult and dangerous, and it should never be undertaken except by experienced and skilful surgeons, who can have associated with them clinicians experienced in the dietary management of metabolic diseases.

Highland Avenue and Sycamore Street

## USE OF HISTAMINE IN THE TREATMENT OF PRURITUS

### PRELIMINARY REPORT

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AND

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BOSTON

Millet and Brown<sup>1</sup> have treated patients with angio-neurotic edema by repeated injections of small amounts of histamine and have obtained favorable results in a few instances. Several months ago, we administered the drug to a patient (case 1 in the accompanying table) with severe generalized urticaria and constant, intense pruritus, three weeks in duration. Epinephrine, ephedrine, and calcium salts had failed to give relief. The first subcutaneous injection of 0.5 mg. of histamine resulted in complete disappearance of pruritus within twenty minutes. The wheals, however, were not appreciably affected. Eighteen hours later the pruritus returned. A second injection of the drug given at that time resulted in complete relief from itching within ten minutes and disappearance of all wheals within half an hour. Histamine was then administered twice daily for five days. Although wheals returned from time to time, their number constantly diminished, and they were not accompanied by pruritus except on two or three occasions. Each injection of histamine resulted in prompt relief from itching, when present and gradual disappearance of the wheals. At the end of five days the patient was free of all symptoms and had only an occasional wheal. Three months later there had been no return of urticaria.

Because of this striking therapeutic result and the apparent effectiveness of histamine in relieving pruritus independently of its effect on urticarial lesions, the drug was administered not only to a small series of subjects with pruritus accompanying urticaria but also to a number of patients with itching due to other conditions. In all but one subject the customary therapeutic measures had been employed previously and without relief. The drug usually was administered in amounts of 0.5 mg. twice daily, but in one subject 1.0 mg. was given three times a day for several days and in two with bronchial asthma the first one or two injections were reduced to 0.2 or 0.3 mg. Doses of 0.5 mg. usually caused moderate to intense flushing of the face and neck with transient headache, and occasionally the subjects noticed palpitation for a few minutes. No untoward reactions were encountered, but the drug was not administered to patients with myocardial insufficiency or angina pectoris. Doses of 0.5 mg. did not

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<sup>1</sup> Millet, R. F.: Heat Sensitiveness, Angioneurotic Edema, Purpura and Ulcers of the Leg Following Femoral Thrombophlebitis, with a comment by Dr. George E. Brown, *M. Clin. North America* 15: 237 (July) 1931.

<sup>2</sup> Two preparations of histamine were used: histamine dihydrochloride marketed in 1:1000 solution as Imido by Hoffmann-La Roche, Inc. and histamine acid phosphate marketed as Ergamine Acid Phosphate by Burroughs-Wellcome & Co.

precipitate asthmatic attacks in the two subjects with bronchial asthma. All patients were kept in bed for one hour after each injection of histamine.

## RESULTS

Thirteen patients in all were treated, and over half of these obtained at least temporary and partial relief from itching, as shown in the table. Five patients in addition to the case just reported had pruritus associated with urticaria. One was completely relieved for two hours after the first injection of the drug, while another reported partial relief after the second dose of histamine and was practically free of symptoms after the third injection of the drug. In both of these patients, urticaria and pruritus subsequently returned. Further treatment with histamine gave partial relief in the first but was ineffective in the second. In one other subject with urticaria (case 5), the symptoms almost completely disappeared during the period of treatment, but improvement occurred so slowly that the possibility of spontaneous convalescence must be considered.

the treatment of urticaria. Brack<sup>5</sup> and Lichtman<sup>6</sup> also employed the drug successfully by mouth as an antipruritic agent. Several of our patients were given ergotamine tartrate ("Gynergen") by mouth in doses of 1 mg three times daily for five days either before or after treatment with histamine. In none was a favorable therapeutic response observed, as shown in the table.

With the exception of one subject with urticaria (case 5), all the patients who were benefited by treatment with histamine showed distinct improvement or were almost completely relieved of pruritus after the first one to three injections of the drug. In four cases, in addition to the one reported at the beginning of this communication, the results were sufficiently impressive to warrant more detailed description.

## REPORT OF CASES

CASE 3—J. G., a white man, aged 36, a chauffeur, complained of generalized urticaria with intense itching, two days in duration. He was in such great distress that it was decided

*The Treatment of Pruritus with Histamine*

Case	Sex*	Age Years	Diagnosis	Duration of Pruritus	Treatment with Histamine		Result	Comment
					Amount Given Mg †	Duration of Treat- ment Days		
1	♀	20	Urticaria	3 weeks	0.5 b i d	6	Complete relief	Still free from symptoms three months later
2	♂	24	Urticaria	3 months	0.5 b i d	10	No relief	
3	♂	36	Urticaria	2 days	0.5	1	Immediate relief	Urticaria and pruritus returned after two hours treatment with ergotamine tartrate ineffective; histamine, 0.5 mg b i d for five days gave partial relief
4	♀	32	Urticaria bronchial asthma	1 year	0.3-0.6 b i d	4	Practically complete relief	Urticaria and pruritus returned two weeks after discharge; subsequent treatment with histamine ineffective
5	♀	21	Urticaria	6 weeks	0.5 b i d	16	Practically complete relief	Possibly spontaneous recovery; ergotamine tartrate previously ineffective; free from symptoms one month after treatment
6	♀	40	Urticaria	2 days	0.5 daily	6	No relief	
7	♀	49	Dermatitis cause unknown	18 months	0.5 b i d	7	Partial relief	
8	♂	42	Pruritus in crural region bronchial asthma	1 year	0.2-0.5 b i d	5	Practically complete relief	Pruritus returned three weeks after discharge; subsequent treatment with histamine ineffective; ergotamine tartrate ineffective
9	♀	41	Pruritus ani	1 year	0.5 b i d	4	No relief	Ergotamine tartrate previously ineffective
10	♂	68	Pruritus ani	Several years	0.5 b i d - 10 t i d	25	No relief	Ergotamine tartrate previously ineffective
11	♂	55	Pruritus ani	1 year	0.5 b i d	7	No relief	
12	♀	34	Pruritus vulvae	3 years	0.5 b i d	8	Practically complete relief	Subsequent treatment, 0.5 mg of histamine twice weekly for five weeks; only occasional mild itching of short duration, five months after discharge
13	♀	40	Kraurosis vulvae	17 years	0.5 b i d	16	Partial relief	

In this column ♂ indicates male ♀ female  
† By subcutaneous injection

Seven of the thirteen subjects treated with histamine had pruritus due to conditions other than urticaria, and four of these were benefited by the treatment. One patient with pruritus vulvae three years in duration, obtained lasting and practically complete relief from itching. Another who had had severe pruritus of undetermined etiology in the crural regions for one year was almost entirely free of symptoms for three weeks after four days of treatment. Partial relief from itching was obtained in one subject with severe, generalized dermatitis of unknown cause, eighteen months in duration and in another with pruritus due to kraurosis vulvae seventeen years in duration. The three patients in this group who failed to obtain relief from histamine all had pruritus ani.

Maier<sup>7</sup> and Babalan<sup>8</sup> reported favorable results from the oral administration of ergotamine tartrate in

to proceed immediately with histamine therapy. Three minutes after the subcutaneous administration of 0.5 mg of the drug, itching was completely relieved, and within seven minutes practically all the wheals had disappeared. Two hours later a number of wheals returned with moderate itching. The patient was given ergotamine tartrate, 1 mg by mouth three times daily for five days without effect. Histamine, 0.5 mg, was then administered subcutaneously twice daily for five days with partial relief of the urticaria and itching.

CASE 4—F. U., a white married woman, aged 32, had had bronchial asthma and almost constant generalized urticaria with moderate to intense itching for one year. Calcium salts by mouth and epinephrine by subcutaneous injection had failed to give relief. The patient was admitted to the hospital to receive injections of histamine twice daily for four days. The first dose of the drug 0.3 mg had no effect on the symptoms but the second injection amounting to 0.5 mg, gave complete

<sup>7</sup> Maier H. W. Ergotamine inhibiteur du sympathique etude en cours et comme moyen d'exploration et comme agent therapeutique Rev. re. 11 1104 1928  
<sup>8</sup> Babalan Le tartrate d'ergotamine dans l'urticaire Bull. soc. fr. de dermat. et syph. 16 402 (Apr. 1929)

<sup>5</sup> Brack Wilhelm Ueber das Wesen und die Bedeutung der Alimenteren Hamorrhagie II Die Verschiedenartigkeit des Reaktionsablaufes und ihre Beurteilung Sympathikotonische und Parasympathikotonische Reaktionen Ztschr. f. d. ges. exper. Med. 61 150 1928  
<sup>6</sup> Lichtman S. S. Therapeutic Response to Ergotamine Tartrate in Pruritus of Hepatic and Renal Origin J. A. M. A. 97 1463 (Nov. 14) 1931



amplified by Rumreich, Dyer and Badger, and by the recent work of Dyer, Rumreich and Badger, at the National Institute, in recovering the virus from rat fleas that had been obtained at typhus foci.<sup>3</sup> These findings have been confirmed by Kemp. The virus has been recovered also from brains of wild rats by Mooser, Castaneda and Zinsser in Mexico, and by Dyer in this country. Dyer and Ceder have transmitted the disease experimentally to animals by means of the rat flea



Fig 1—Spotted fever, Eastern

Some European workers have attempted to explain the interepidemic survival of the virus on the basis of inapparent infections in man, for the detection of which they have devised highly refined modifications of the Weil-Felix reaction. American investigators are inclined to regard endemic flea-borne typhus as the form in which the virus survives between epidemics.

The diseases mentioned form but a small part of a large group of diseases of the type of both the typhus and the Rocky Mountain spotted fever occurring in all the continents. Endemic typhus is known to occur in various parts of South America, Europe, Asia and Australia. Forms of the tick-borne spotted fever are known to exist in Europe, Africa and Asia. They differ somewhat in their characteristics but appear to be, essentially, the same disease.

We shall consider some features of the two diseases of this group that occur endemically in this country. In this connection it should be borne in mind that the typhus described is that seen in New York, Baltimore, Savannah, Tampa and smaller urban communities in Georgia and Florida, the spotted fever is the eastern type of the disease as observed along the Atlantic seaboard from New York to Georgia.

#### TYPHUS

Endemic typhus is essentially an urban disease. It attains its highest prevalence in our seaports and tends to extend inland along lines of communication, both by water and by rail. Most of the cases occur in the late summer and fall. Men are attacked much more frequently than women, probably because of their greater occupational exposure to infection. For the same reason the middle age groups contribute the largest proportion of cases. Endemic typhus is rare among children. No social stratum is exempt. Handlers of food are exposed to greater risk of infection than other occupational groups. Most cases occur sporadically, but occasionally multiple cases originate from a single focus of

infection. The sources are rat-infested premises, provided infected rat fleas are present. The incubation period, seldom ascertainable, varies from six to fourteen days. Secondary cases have not been observed.

The onset is, with about equal frequency, either abrupt, with a chill or chilliness, slight fever, headache, dizziness, anorexia and prostration, or gradual, with irregular development of symptoms and intervening periods of subjective improvement during which the patient may be ambulatory.

The temperature rises in steplike fashion each afternoon, reaching 102 to 105 F. in from three to six days, with morning remissions of 1 to 3 degrees. The fever lasts from ten to sixteen days, usually fourteen days. Defervescence is generally by rapid lysis.

The rash appears between the fourth and the sixth days, as a rule it occurs on the fifth day. It appears first on the lower part of the chest anteriorly and laterally, and over the upper part of the abdomen, it also frequently appears on the medial surfaces of the arms. In many cases there is no further extension, but frequently the back is next involved and less often the eruption becomes fairly well generalized though seldom profuse. The palms, soles and the face are involved only very rarely. The rash consists of macules varying from a rose to a dull red, from 2 to 4 mm. in diameter with rather poorly defined margins. These lesions fade but usually do not completely disappear, on pressure. In some cases many of the lesions are maculopapules. Occasionally, some are petechial. The rash is in evidence for from two to nine days and then rapidly disappears so that by the time of defervescence there seldom remains any vestige of it. In occasional cases no rash is observed at any time. In Negroes the condition is discernible only when papular lesions are present.

At the height of the disease the face is flushed and the tongue dry and coated, sometimes with a vividly red tip and edges. Conjunctivitis, sometimes intense, is present in most cases. The spleen is seldom palpable.



Fig 2—Spotted fever. Case originating in Virginia

The pulse is, as a rule, remarkably slow in ratio to the temperature. There is about some of the more severe cases a peculiar mousy odor. The commonest symptoms at the height of the disease are, in order of frequency, prostration, severe headache, usually frontal, constipation, often obstinate, nausea, low backache and pains in the legs, generalized aching, unproductive cough, photophobia, night sweats, often preceded by chilliness, and sore throat.

The mental condition is often unaltered. Apathy is frequently noted, this may alternate with intervals of

<sup>3</sup> Dyer, R. E., Rumreich, A. and Badger, L. F. Pub. Health Rep. 16: 334 (Feb. 13) 1931.

irritability, during which insomnia is common. Occasionally there is a mild delirium, when this occurs, it is usually of short duration.

The leukocyte count is within normal limits or shows leukopenia. Rarely, there is low grade leukocytosis. The urine at times contains a trace of albumin. The blood serum agglutinates *B. proteus* X<sub>10</sub>, this reaction can be obtained after the first week.

Convalescence, as a rule, is speedy in young patients. Older persons recover more slowly. The fatality rate is less than 1 per cent. In most fatal cases there are preexisting complicating pathologic processes.

There is no specific therapy. Treatment is symptomatic. The patient should be kept quiet, physically and mentally. A copious intake of fluid is highly desirable. Nourishment should be kept up. The constipation is best relieved by enemas. Antipyretics should be avoided, but tepid sponging is of value. An ice cap applied to the head is often useful. Sedatives, barbitol or codeine may be used when indicated.

For the prevention and possible eradication of the disease, elimination of rat harborages is indicated. There is at present in process of development at the National Institute of Health a vaccine prepared from infected fleas, which gives some promise of efficacy as a prophylactic. A vaccine prepared by Zinsser and Castaneda from the peritoneal exudate of specially treated rats infected with Mexican typhus is now undergoing field trial.

#### SPOTTED FEVER

The Eastern type of spotted fever occurs in the late spring and throughout the summer, with an occasional case in the fall months. Cases in men predominate. Cases in children constitute a large proportion of the total number. Spotted fever tends to recur in the same locality, sometimes in successive years, sometimes after intervals of several years. Infection is derived from the bite of an infected tick, occasionally it follows the crushing of engorged ticks. The incubation period varies from two to twelve days, but most often lasts from three to seven days. Multiple cases in a household are not uncommon.

The onset is usually abrupt, in the late afternoon or early evening. The initial symptoms are similar to those of typhus, but the prostration and generalized aching are more pronounced, and frequently there is pain in the neck; occasionally there is also abdominal pain.

The fever runs a course much like that of typhus, but reaches higher levels. In severe cases it may not display the marked remissions, and tends to last three weeks, although the range is from eleven to twenty-four days, a duration of fourteen or fifteen days is common.

The rash (figs. 1 and 2) appears between the second and the fifth days, most frequently it is seen on the third or fourth day. The site of first appearance is nearly always the wrists and the ankles. The rash is usually noted next on the back; it then rapidly becomes generalized. It spreads in centripetal fashion. The palms and soles are usually involved; the face frequently and the scalp occasionally. The extension is complete in from two to three days. In persons with deeply sunburned hands and forearms the early stages of the rash may be readily overlooked on these parts. The lesions are at first faint roseolus macules, from 2 to 8 mm in diameter which often fade in the mornings and reappear with the rise of fever during the afternoon. They grow more distinct from day to day and by the middle of the second week are definitely petechial

in all but the milder cases. The rash in its full development is purpuric, and as a rule most abundant and most intense on the wrists and ankles, the legs, the upper part of the back, the shoulders, the lateral surfaces of the arms, and the buttocks, in the order mentioned (fig. 3). Some of the lesions may become confluent, especially on the ankles. A well developed purpuric rash often persists for several weeks as dusky, purplish or yellowish-brown spots, which may be accentuated by a hot bath or by application of a tourniquet.

Sometimes there is a branny desquamation, occurring especially over the legs, commencing late in the disease or early in convalescence. Occasionally there is, at the site of the tick bite, a small ulcer, with or without enlargement of the regional lymph nodes. Rarely is the tick found attached after the onset of symptoms. Simultaneously with the development of the cutaneous eruption there frequently appear hemorrhagic spots, 2 or 3 mm in diameter, on the buccal

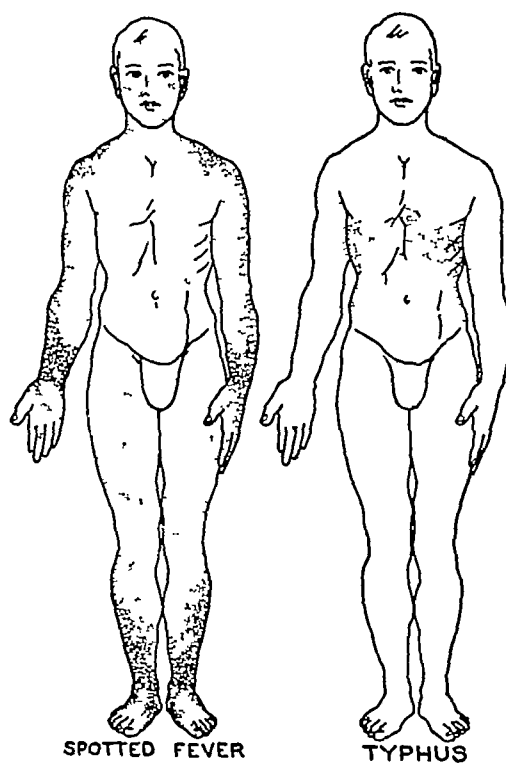


Fig. 3—Characteristic types of distribution of rash in endemic typhus fever and spotted fever.

mucosa, particularly over the palate. The tongue is dry and coated in the center, with a dark red border, the papillae are frequently so enlarged as to give the tip and edges a mulberry-like appearance. The pharyngeal mucosa is usually inflamed. Occasionally small ulcers appear on the palate or tonsils. The face is flushed, sometimes dusky. The eyes are injected. Occasionally there is marked edematous swelling of the face, hands, feet and genitalia. Rigidity of the neck, with presence of Kernig's sign, is frequently noted. The spleen is usually enlarged and tender. The pulse tends to be more rapid, in ratio to the temperature, than in typhus. A very rapid pulse is of bad prognostic significance.

The symptoms are much the same as those enumerated for typhus fever. Nausea and vomiting are more common as is pain in the back of the neck. Epistaxis and dysuria occur but rarely. Disturbances of the central nervous system are much more severe than in



typhus The lethargy may progress to stupor or even coma Delirium is common, and may be violent and protracted Meningismus is frequent In severe cases there may be loss of sphincter control Hyperesthesia and tremors are occasionally noted Not infrequently, there are pains in the muscles, bones and joints

The white blood cell count in the early stages may be within normal limits, at the height of the illness a definite leukocytosis as a rule occurs The red blood cell count often falls as the disease progresses The urine may contain small quantities of albumin and, rarely, casts The Weil-Felix reaction is usually, but not always, positive

Convalescence tends to be protracted The commonest complications are mental confusion, deafness and visual disturbances, which may persist for weeks

The fatality rate is about 25 per cent When death occurs, it is usually in the second week

There is no specific treatment Baths and sedatives may serve to quiet the patient and help to conserve his strength Richards and others familiar with the western types of the disease recommend the use of caffeine and digitalis as cardiac stimulants when indicated Maintenance of an adequate intake of fluid is important

Prevention must depend largely on personal prophylaxis When known tick-infested areas are entered during the spring and summer, it is advisable to wear such clothing as will compel the ticks to crawl up the outside of the clothing The ticks then may be detected on contact with the skin of the neck, or before reaching it In addition, an examination of the entire body, especially of the hairy parts, and also of the inside of the clothing, should be made at least once during the day and again on retiring Ticks seldom attach immediately After removal of attached ticks, it is customary, in the West, to cauterize the spot with silver nitrate or nitric acid The tick vaccine developed by Spencer and Parker confers a substantial measure of protection

#### ABSTRACT OF DISCUSSION

DR VICTOR H BASSETT, Savannah, Ga It is astonishing that there occurs in the eastern part of the United States an eruptive fever of the type of the Rocky Mountain fever, even if it has some separate features One is impressed by the fact that the clinical pictures described by Dr Rumreich and his associates for the fevers of the endemic typhus type are clear cut In observing these fevers over a term of years I had some difficulty in classifying them because the fact that they were two diseases was not known at that time This was especially true in regard to the mortality rate More cases of Brill's disease have been observed in Savannah probably than in any other locality in the United States of equal size These cases have furnished a considerable part of the material which the officers of the Public Health Service have studied For many years it has been recognized that certain of our endemic fevers did not find a place in the list of commonly recognized fevers The first observation in Savannah of a fever of this type was in May, 1909 Since 1915 we have known in Savannah that we had an endemic fever different from typhoid in that it was less severe clinically, with less fatality, and of shorter duration These cases have gradually increased in number until we now have from forty to eighty yearly Over a nine-year period the number of cases observed has been 510, of which 486 were in white persons and 24 in Negroes The annual morbidity rate is therefore 55.2 per hundred thousand of population The annual morbidity rate of Brill's fever for the white population was 125.3 per hundred thousand of population For the Negro population it was only 7 The annual mortality rate for the entire population was 1.98, for the white population, 2.94, for the Negro popu-

lation, 0.87 The mortality has certainly increased under our observation Of the first 100 cases we had only one death, and in the whole series we had mortality and morbidity of one to twenty-five, and in one year it ran as high as one to twelve It is remarkable that only seldom are there two or more cases in the same family at the same time, although numerous instances have been observed in which cases have occurred from year to year in families living in the same residence or working at the same place of business It is probable that mild cases are frequently overlooked in families in which severe cases occur Prophylaxis seems now possible from the work of the Public Health Service, and a statement is needed with regard to the means of procedure to control or lessen this disease The fact that the rat is the animal host makes control difficult and expensive, but it is still possible for the individual who can control his surroundings both at home and in his business to protect himself It would seem desirable, on account of the epidemiologic relations of this disease, to have a different term for this disease, distinguishing it from epidemic typhus I do not deal with the eastern type of Rocky Mountain fever, since we have had very few cases of this type

DR G GILL RICHARDS, Salt Lake City This is a disease that we felt belonged strictly to us out West I feel that it is really a very serious disease In some regions we have a mortality rate as high as 90 per cent among our adults, and it has almost ruined some of our industries It is certainly very interesting to us out there to know it is appearing in the eastern states I should like to ask whether vaccine prophylaxis is being used

DR ADOLPH S RUMREICH, Washington, D C No vaccine has been used in the East excepting among those of us who are working with the disease in the field of the laboratory There has as yet been no demand for it The disease is pretty severe The mortality rate averages about 25 per cent in the East The vaccine should, of course, afford considerable protection

#### MELANURIA

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Melanuria has been reported as occurring in a variety of apparently unrelated pathologic conditions, such as melanotic neoplasms, wasting diseases, intestinal obstruction, lobar pneumonia, pernicious anemia, extensive liver destruction, exposure to the sun's rays, and after roentgenologic treatment The sum of these observations might easily give the impression that melanogen in the urine is not an uncommon finding However, a survey of fifteen cases of melanotic malignant growths treated at the Presbyterian Hospital<sup>1</sup> during the past ten years revealed the fact that melanin was found in the urine of only four of these patients It seemed incongruous that melanuria should be reported as occurring in so many conditions unassociated with necropsy evidence of pathologic melanin formation, whereas in those diseases in which the excessive production of melanotic pigment is a characteristic feature, melanuria was demonstrated in only about 25 per cent of the Presbyterian Hospital cases

The foregoing observations prompted us to evaluate the analytic methods used for the identification of melanin in the urine A series of cases<sup>2</sup> that include all the conditions in which melanuria has been previ-

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1 We are indebted to Dr A O Whipple for permitting us to use the case records of his service

2 We are indebted to Drs A O Whipple, Walter W Palmer and D B Kirby for their cooperation in permitting us to study the urines of their patients

ously reported were selected, and twenty-four hour specimens of the urines were tested for melanin by the commonly accepted methods. A proved melanuria was used as the standard for comparison, and most of the

TABLE 1—Fifteen Cases of Melanoma from the Presbyterian Hospital, New York, Over a Period of Ten Years, from 1922 to 1931

Patient	Diagnosis*	Melanuria
P C	Melanosarcoma of the neck liver metastasis	Present
M R	Melanocarcinoma of the rectum metastasis to the regional lymph glands	Absent
W S	Melanocarcinoma of the plantar surface of the foot	Absent
S C	Melanocarcinoma of the toe	Absent
G S	Melanocarcinoma of mammary origin	Present
I G	Melanocarcinoma of the buttock	Absent
A S	Melanocarcinoma of the anterior crural region	Absent
M P	Melanocarcinoma of the forearm with metastasis	Absent
R R	Melanocarcinoma of the dorsal surface of the thumb	Absent
J S	Melanosarcoma of the buttock with metastasis	Absent
A V	Metastatic melanocarcinoma of unknown origin	Absent
D L	Melanosarcoma of the left axilla with metastasis (metastatic tumors showed no pigment)	Absent
C H	Melanosarcoma of the choroid with metastasis to the liver	Present
B E	Melanosarcoma of the choroid with metastasis to the liver	Present
O T	Melanocarcinoma of the index finger	Absent

\* The diagnosis in every case was confirmed by biopsy

urines were tested repeatedly by one or more of the several tests. Table 2 illustrates our observations.

The tests used in our study were chosen because they are most commonly employed for the identification of melanin in the urine. The ferric chloride reaction<sup>3</sup> for melanin yielded many confusing results which, were a standard for comparison not available, might be interpreted as positive.

The addition of ferric chloride to a urine that has become alkaline frequently produces a black or brown precipitate. Certain drugs that are excreted in the urine combine with ferric chloride and give misleading color reactions. Bromine water<sup>4</sup> and lead acetate<sup>5</sup> were less variable, but nevertheless inconsistencies occurred. The epinephrine test<sup>6</sup> has obvious pitfalls, in that the addition of alkali to epinephrine is of itself sufficient to form a melanin. The test of Medes and Berglund<sup>7</sup> is applicable mainly when considerable amounts of melanin are being excreted. De Jong<sup>8</sup> states that the addition of an oxidizing agent yielding a dark precipitate is unreliable and proposed the use of lead acetate, which for laboratory analysis seems very satisfactory.

All workers are in accord that the constant characteristics of melanin are its black or brown color, its solubility in alkali, and its insolubility in acid, ether or chloroform.

Our results with these various tests showed so marked a lack of agreement that a procedure comprising the essential features of concentration, precipitation and resolution was adopted. The test is as follows:

1 A twenty-four hour specimen of urine is evaporated to one-fourth of the original volume.

2 One gram of potassium persulfate is added for each hundred cubic centimeters of the concentrated urine.

3 Helman D. Beitrage zur Kenntnis der Melanine. *Centralbl f inn Med* 27:11017, 1902.

4 Jeter J. P. Melanuria Without Melanocarcinoma. *Arch Int Med* 72:706 (Nov.) 1923.

5 De Jong H. H. Van der Zee. Een Waarschuwing Bij Het Zoeken naar Melanine en Epinephrine in de Urine. *Nederl Tijdschr v Geneesk* 63:565, 1905.

6 Calkins I. Untersuchungen über farbige bildende Fermente in Formeln für Melanine. *Ztschr f d ges exper Med* 20:21, 1910.

7 Medes and Berglund. Improved Method for the Detection of Melanine in Human Urine. *Proc Soc Exper Biol & Med* 25:105 (Oct.) 1925.

3 At the end of two hours, an equal volume of absolute methyl alcohol is added. The precipitated melanin is allowed to settle.

4 The precipitate is filtered off and washed with water till the washings are colorless, then washed with methyl alcohol, to remove any soluble pigments remaining. Finally, it is washed with ether. If the test is positive, there remains on the filter paper a brownish black precipitate, which can be dissolved off with alkali—most conveniently with 5 per cent sodium hydroxide. Acidification of the alkaline solution causes a reprecipitation of the melanin.

To determine quantitatively the amount of melanin excreted, the four steps just indicated are carried out, including the solution of the melanin in 5 per cent sodium hydroxide. The latter solution is made up to a definite volume, and an aliquot portion is taken and acidified with tenth normal hydrochloric acid. This is filtered on a weighed filter paper, then washed with water till all the acid is removed and dried, weighed and the total excretion calculated.

In our hands this test gave positive reactions only in cases of a melanotic malignant growth with metastatic involvement of the liver. Six cases of melanocarcinoma and melanosarcoma were followed over a period of two years. Melanuria was present in three of these patients from the time of operation, the other

TABLE 2—Result of Four Tests Made of Urine

Diagnosis	Number of Cases	Ferric Chloride Test	Bromine Water	Lead Acetate	Potassium Persulphate
Nonmelanotic but advanced carcinoma and sarcoma	65	Positive 10 Negative 49	2 63	1 64	5 60
Advanced nephritis	4	Positive 1 Negative 3	0 4	0 4	0 4
Severe diabetes mellitus	0	Positive 1 Negative 8	0 0	0 0	0 0
Advanced exophthalmic goiter	3	Positive 3 Negative 0	2 1	0 3	0 3
Pernicious anemia	17	Positive 3 Negative 14	2 15	0 17	0 17
Leukemia	8	Positive 2 Negative 6	0 8	0 8	0 8
Severe secondary anemia	3	Positive 0 Negative 3	0 3	0 3	0 3
Addison's disease	1	Positive 0 Negative 1	0 1	0 1	0 1
Melanotic tumors	6	Positive 3 Negative 3	3 3	3 3	3 3
Melanosia coli	1	Positive 0 Negative 1	0 1	0 1	0 1
Severe sunburn	3	Positive 0 Negative 3	0 3	0 3	0 3
X-ray burn	1	Positive 0 Negative 1	0 1	0 1	0 1
Advanced liver destruction	2	Positive 1 Negative 1	0 2	0 2	0 2
Phenol poisoning	2	Positive 0 Negative 2	0 2	0 2	0 2
Pregnancy	4	Positive 0 Negative 4	0 4	0 4	0 4
Pigmented moles	7	Positive 0 Negative 7	1 6	0 7	0 7
Normal Negroes	10	Negative 10	10	10	10
Pneumonia	4	Negative 4	4	4	4
Tandice obstructive and nonobstructive	12	Positive 4 Negative 8	2 10	1 11	0 12
Tumors of the eye other than melanocarcinoma	7	Negative 7	7	7	7

patients never excreted melanin or its precursor in the urine. The three cases in which the urines were consistently negative for melanin were associated with extensive local lesions and many peripheral metastases, but neither at operation nor at autopsy could liver metastasis be demonstrated. Our observations appear

to corroborate a statement, made by Eppinger<sup>8</sup> in 1910, that only when there is a metastatic involvement of the liver does melanin appear in the urine. Although this observation is of the utmost clinical significance, little notice has been taken of it.

#### CONCLUSION

1 Melanuria is a rare finding, even in melanotic malignant tumors.

2 Many tests give pseudoreactions, difficult of interpretation.

3 A simple test is suggested, which in our hands never yielded confusing end-results.

## Clinical Notes, Suggestions and New Instruments

### A CASE OF LARGE NONMALIGNANT GASTRIC ULCER AND A CASE OF LARGE DUODENAL ULCER WITH FATAL HEMORRHAGE

GEORGE N. BURGER, M.D., AND PAUL MERRELL, M.D.  
CINCINNATI

Crohn<sup>1</sup> states that "the average size of a gastric ulcer is 2-3 centimeters in diameter, although it is not unusual to find an ulcer 4-6 centimeters in width." He describes an ulcer which "eroded nearly the entire posterior wall of the stomach so the palm of the hand laid on it covered it with difficulty." Alvarez and MacCarty<sup>2</sup> state from their own data that on the basis of size alone if an ulcer is larger than a dollar, it is almost certainly a cancer. Peabody<sup>3</sup> described a gastric ulcer measuring 19 by 10 cm.

Duodenal ulcers, according to Crohn, average 0.5 by 1 cm in diameter. He describes a duodenal ulcer measuring 8 by 3.5 cm in diameter which had penetrated through the base of the duodenum in its entire length, exposing the pancreas and causing a fatal erosion of the superior pancreaticoduodenal artery.

We report a case of gastric ulcer in which the ulcer measured 6 by 11 cm in diameter and which showed no malignant changes, and a case of an unusually large duodenal ulcer, measuring 2.5 by 5 cm.

#### GASTRIC ULCER

The first patient was a white man, aged 58, who entered the hospital early on the morning of Jan. 22, 1932. He complained of bleeding from the stomach. The night before admission he had suddenly vomited about a quart and a half of bright red blood. Small amounts of blood were vomited during the night and he complained of tearing pains throughout the abdomen.

For the past thirty-three years he had suffered from an aching or "tearing" pain in the epigastrium. This was localized and it appeared about two hours after each meal and during the night. Baking soda and food afforded relief. He frequently vomited sour material after meals and described some of the material as resembling "coffee grounds." The attacks of pain occurred chiefly in the spring and fall, with almost complete freedom in the winter and summer. His appetite was good, there was some fear of eating and the symptoms were aggravated by eating sour foods. His bowels were usually constipated and he stated that his stools were tarry at intervals for six months before admission. He had lost approximately 40 pounds (18 Kg.) in the last year.

On admission the patient appeared critically ill, undernourished and anemic. The temperature was 95 F., the pulse rate 104, and respirations 36. He was restless but rational and cooperative. The skin and mucous membranes were very

pale. Dried blood was seen in the pharynx. The lungs were clear. The heart was not enlarged, the sounds were distant. The systolic blood pressure was 74, the diastolic blood pressure could not be obtained. The abdomen was below the chest level and generalized tenderness was present, but no masses or solid organs could be felt. The red blood count was 1,200,000, hemoglobin, 25 per cent (Sahli). The white blood count was 27,000, lymphocytes, 8 per cent, mononuclears, 25 per cent, neutrophils, 89.5 per cent. The blood Wassermann reaction was negative. He was given supportive treatment for gastric hemorrhage but failed to respond and died within twenty-four hours.

The stomach at autopsy had a large ulcer on the lesser curvature. This measured 6 by 11 cm and extended to within 2 cm of the pylorus (fig. 1). There had been a subacute perforation with the pancreas presenting posteriorly and the liver anteriorly, fibrous adhesions to these viscera preventing the escape of gastric contents into the abdominal cavity. There was 1,500 cc of partially clotted blood in the stomach. Blood was present also in the enteric tract, with dark discoloration of the mucosa. There were many small hemorrhagic areas around the edge of the large gastric ulcer, some of which were easily demonstrated as representing fairly large vessels. The edges of the ulcer were distinctly indurated and had a thickness of about 1 cm. Section of the ulcer revealed dense fibrous tissue extending into the pancreas and the liver.

The pathologic diagnoses were massive gastric ulcer, chronic, with no evidence of neoplasm; terminal hemorrhage into the



Fig. 1 (case 1)—Gastric ulcer

gastro-enteric tract, subacute perforation with fibrous adhesions to the liver and pancreas, far advanced atherosclerosis of the aorta with calcification, myocardial fibrosis.

#### DUODENAL ULCER

The second patient was a white man, aged 64, who entered the hospital, May 3, 1932, complaining of stomach trouble. The onset of his present illness began six weeks before admission with a severe persistent epigastric pain, nausea and vomiting about fifteen to twenty minutes after meals, loss of appetite and hiccuping. The bowels were constipated during that time and the stools were black. There was no history of hematemesis. He lost 30 pounds (13.6 Kg.) during the illness. He stated that thirty years before he was treated for peptic ulcer and was in a hospital nine months at that time. He experienced no other symptoms of ulcer between the first and last attacks.

The patient appeared acutely ill. The skin was loose and flabby, without eruption. There was no icterus. The fundus

<sup>8</sup> Eppinger, Hans. *Leber Melanurie*. *Biochem. Ztschr.* 25: 181, 1910.

From the Department of Internal Medicine and the Department of Pathology, University of Cincinnati College of Medicine.

<sup>1</sup> Crohn, B. B. *Affections of the Stomach*. Philadelphia: W. B. Saunders Company, 1927, pp. 564-547.

<sup>2</sup> Alvarez, W. C., and MacCarty, W. C. *Staff Meetings of Mayo Clinic* 3: 127 (April 18), 1928.

<sup>3</sup> Peabody, F. W., quoted by Osler, William. *The Principles and Practice of Medicine*, D. Appleton & Co., New York, 1926.

showed evidences of arteriosclerosis. The heart and lungs were normal. The pulse rate was 108, the rhythm regular. The blood pressure was 170 systolic, 90 diastolic. The peripheral vessels were thickened. The abdomen was below the chest level and there was extreme tenderness over the right epigastric region. The rectus muscles were so tense that nothing could be learned by abdominal examination. Rectal examination was negative.

The course of his illness was steadily downward. May 7, he vomited a great deal of dark brown bloody material and died a few hours later.

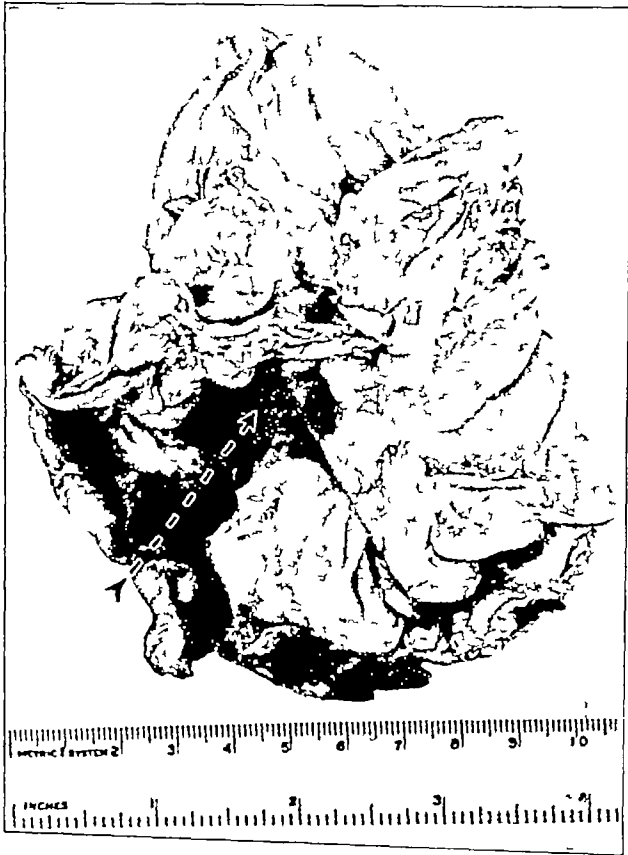


Fig 2 (case 2)—Duodenal ulcer

The red blood count was 3 800 000, hemoglobin, 65 per cent (Tallqvist), white blood count, 13 600, lymphocytes, 18.5 per cent, mononuclears 3.5 per cent, neutrophils, 78 per cent. The urine was practically normal and was amber colored. The blood Wassermann reaction was strongly positive.

At autopsy the entire gastro-enteric tract was distended and found to be filled with dark reddish 'coffee grounds' material. A mucoid lining overlay the entire gastric mucosa. A large oval ulcer was present in the duodenum 1 cm from the pyloric ring. It measured 2.5 by 5 cm, and its edges were distinctly indurated. One definite 'bleeding point' was demonstrated. On section the base of the ulcer was found to be the pancreas. Scar tissue was prominent and was invading the pancreas. No evidence of neoplasm was demonstrated.

The pathologic diagnoses were chronic duodenal ulcer with terminal hemorrhage, subacute perforation of duodenal ulcer with marked scarring involving the pancreas and adjacent viscera, focal area of cerebral softening, chronic pancreatitis with fibrosis, generalized arteriosclerosis.

#### COMMENT

It is interesting to note the probable long duration of the lesion in both cases described. In one the symptoms had a duration of thirty-three years while the second patient had received treatment for ulcer thirty years prior to his admission. Both patients also presented advanced arteriosclerosis. In each, unusually large ulcers were found. Whether arterial changes and the unusually long duration of symptoms may have been factors in the size of the ulcers is, of course, not known.

#### FOREIGN BODY IN DUODENUM

##### REPORT OF CASE AND METHOD OF REMOVAL

SIDNEY W. RAYMOND, M.D., CHICAGO

On April 1, 1932, a white girl, aged 14 months, swallowed a "Bobby Pin." A roentgenogram of the abdomen showed the pin lying in the fundus of the stomach. The child was placed on a diet consisting mainly of vegetables and citrus fruit pulp.

The next day another roentgenogram showed the foreign body in what was believed to be the first part of the duodenum. The roughage diet was continued as before.

A picture on the second day revealed the foreign body to have passed to a position corresponding to the second or descending portion of the duodenum. Further progress was not expected, as the pin was 2 inches long and the duodenal curve in an infant is very short. A picture made twenty-four hours later showed no further movement. At this time surgical intervention was advised but was refused by the parents.

I did not see the child again until May 23, 1932. The child had made a normal gain in weight, she had a good color, her appetite was good and the bowels were regular. She had had a mild infection of the upper respiratory tract about two weeks previously, and this had lasted a few days. The position of the pin had been checked by semimonthly fluoroscopic examinations and its position was unchanged. Operation for removal was then performed.

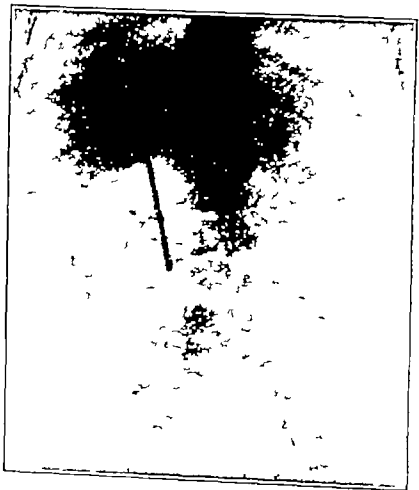
#### OPERATION

Previous to operating, a pin of the same kind and size was found to slide with moderate ease into the side opening of a number 20 (F) catheter. When it was entirely within the tube, the closed end straightened out and prevented the enclosed object from being withdrawn except with difficulty.

Under ether anesthesia an upper right rectus incision was made. The pin was easily palpable in the duodenum, and it was freed and "milked" up to the stomach. Through the thin wall of the stomach the pin was easily placed point first inside the catheter, the same as in the practice test. It was then brought out through the mouth with the head in the extended position.

The abdominal wall was closed without drainage. Three hundred cubic centimeters of physiologic solution of sodium chloride was given subcutaneously and liquids were given by mouth as soon as vomiting had ceased. In forty-eight hours the usual diet was given.

Recovery was uneventful except for a sore throat, which developed on the fifth day and cleared up on the seventh. The child was discharged on the eighth day and has been well since.



Position of pin forty eight hours after ingestion when its progress had been arrested at the sharply curved second portion of the duodenum.

#### COMMENT

This case is reported because of inability to cause the foreign body to pass by the use of roughage, and also because the method employed avoided opening the gastro-intestinal tract. Opening a hollow viscus in the infant, especially the duodenum, is accompanied by a high mortality, and for this reason a method was sought which would make the removal safer.

This method has been tried by me only in this one case, but it could also be applied to other foreign bodies, such as wire, nails, common pins and safety pins. The size of the catheter or stomach tube employed would of course, be governed by the requirements.

6024 West North Avenue.

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT  
H. A. CARTER, Secretary

### SIRIAN ULTRAVIOLET LAMP NOT ACCEPTABLE

The Sirian Ultraviolet Lamp, sold by the Arcturus Radio Tube Company in Newark, N. J., resembles an ordinary incandescent lamp having a tungsten filament enclosed in a glass bulb that transmits the ultraviolet radiations of wavelengths longer than 2,800 angstroms. According to an advertising folder the Sirian Ultraviolet Lamp is made in four sizes, 60 watts, 100 watts, 150 and 300 watts.

The ultraviolet radiation output of wavelengths less than 3,130 angstroms emitted by the Sirian Lamp (150 watts) is too small to be measured by the radiometric procedure. In the Council test a Rentschler photocell of uranium, which is sensitive to wavelengths less than 3,340 angstroms, was calibrated against the Bureau of Standards standard instruments by using the sun as a source. At 9 35 to 9 50 a. m. of a clear day, Oct 11, 1932, the ultraviolet radiation intensity was 43 microwatts per square centimeter where the average summer (June) midday intensity would have been 90 microwatts per square centimeter.

Because of the low ultraviolet radiation intensities emitted, the measurements were made at a distance of only 4 inches (10 cm) below the glass bulb. In view of the large amount of infra-red radiations emitted by the lamp, the heat on the skin will probably not permit operation of the lamp at a much closer distance than 4 inches.

The following results were obtained at a distance of 4 inches or about 10 cm from bottom of bulb

#### Comparative Intensities of Sun and Sirian Lamp

	$\frac{U \cdot V \cdot Q}{\mu W/cm^2}$
Sirian U V Lamp, 120 volts and 150 watts	0.45
The Sun as observed at 9 53 a. m., Sept 11, 1932	43.00
U V Q being ultraviolet intensity and $\mu W/cm^2$ being microwatts per square centimeter	

The measurements on this lamp reveal a little ultraviolet radiation of wavelengths between 3,130 and 3,340 angstroms not generally considered useful for therapeutic purposes.

In order to comply with the minimum specifications of the Council (THE JOURNAL, March 26, 1932, p 1082, July 9, 1932, p 125), the erythemogenic equivalent of this type of lamp would be 130 microwatts per square centimeter, while for the sun it is 90 microwatts per square centimeter.

The ultraviolet radiation intensities available appear to be only from one fiftieth to one one hundredth of the requirements of the Council on Physical Therapy.

The test on this lamp was made without a reflector. It is probable that if an efficient reflector was used the intensity might perhaps be increased by a factor 5, but further considerations would have to be given to heat tolerance and ventilation at this short distance.

The Arcturus Radio Tube Company, Newark, N. J., apparently recommends the use of its lamps in all types of reflectors and in many cases, it seems, pays no attention whatever to the fact that glass, parchment and parchment lamp shades do not reflect any appreciable amount of antirachitic ultraviolet radiations.

As an illuminant, however, this lamp appears satisfactory while it lasts. The tungsten filament is heated to a higher temperature, the purpose of which is to increase the ultraviolet output.

In the small pamphlet called "Sirian Ultraviolet Light 'A Little Sun in Each Lamp,'" there appear certain objectionable phrases as "healthful tonic," "health-giving energy" and "builds up resistance to disease." Promotional advertising matter of this kind, containing the aforementioned objectionable phrases, is bound to be misleading and in effect constitutes an appeal to the public for arguments which are unscientific and may harmfully enhance the feeling of false security on the part of the public.

The Council on Physical Therapy declares the Sirian Ultraviolet Lamp ineligible for inclusion in its list of acceptable devices because (first) the intensity of ultraviolet energy is

too low to meet the minimum specifications of "Ultraviolet Radiation Useful for Therapeutic Purposes—Specification of Minimum Intensity or Radiant Flux. Second Communication" (THE JOURNAL, July 9, 1932, p 125), and (second) the aforementioned health claims recorded in the concern's advertising matter and descriptive literature are unwarranted.

## Committee on Foods

### REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS  
RAYMOND HERTWIG, Secretary

#### Acceptance Withdrawn

#### KIDDIE KANNED SIEVED FOODS—SIEVED VEGETABLES, FRUITS AND SOUPS (SIEVED FOODS FOR INFANT AND INVALID FEEDING)

*Manufacturer*—Kiddie Kanned Foods, Inc., Seattle

The manufacturer has ignored requests for the required information and data for these foods which are now being called for by the Committee under its present Rules and Regulations for all accepted foods. The information of the former submission of these foods is not sufficiently comprehensive to give assurance that they meet the Committee requirements for this type of products as defined by the published General Committee Decision "Vitamin and Mineral Content of Sieved Fruits or Vegetables Recommended for Infants, Children and for Special Diets." The acceptance of these Kiddie Kanned Foods and the privilege of use of the Committee seal or statements of acceptance on the labels and in the advertising, therefore, are being withdrawn.

#### Acceptance Withdrawn

#### SAC-A-RIN BRAND OF CANNED VEGETABLES (PACKED WITHOUT ADDED SALT OR SUGAR)

*Manufacturer*—Kings County Packing Company, Ltd., Oakland, Calif

The manufacturer has not provided the required information and data for these foods which are now being called for by the Committee under its present Rules and Regulations for all its accepted foods. Therefore, the acceptance for these Sac-A-Rin Brand of Canned Vegetables and the privilege of use of the Committee seal or statements of acceptance on the labels and in the advertising are being withdrawn.

#### KRINKO Choice Table Wheat NOT ACCEPTABLE

The Wheat Krinkler Corporation, Columbus, Ohio, submitted to the Committee on Foods a packaged, cleaned and scoured soft red winter wheat called "Krinko Choice Table Wheat."

*Discussion of Advertising*—The advertising accompanying the submission was adjudged in gross violation of the Committee's policies and principles for good advertising. The company was advised of the Committee's recommendations and agreed to revise the advertising. Proof of a revised advertising booklet "Variety, Economy, Health" was criticized but many of the recommendations and criticisms were ignored in the printed copy, which in considerable part is still misleading, misinformative and deceptive.

The revised booklet represents an apparent attempt to induce the belief that health is attained and maintained only by a diet composed of foods in their natural state. The sense of the entire booklet is exemplified in the introductory claims that "present day research for foods reveals that many of our illnesses can be traced to highly processed devitalized foods robbed of health giving proteins, vitamins, mineral oils and salt [and] one of the foods that has been abused the most is wheat. In its natural state wheat contains ever

element in the human body, making it as well balanced a food as any produced" These incorrect statements are given as scientific deductions and are especially misleading because of their seeming plausibility to the uninformed The copy continues in this sense to extol the virtues of whole wheat frequently at the expense of scientific fact to uphold the argument. It is stated that "there is now no secret about its [wheat's] nutritional superiority over most foods there was, quite likely, more energy and resistance to disease stored in the few grains some Pharaoh munched than in the daily portion of the highly-milled wheat we have been accustomed to eating"

It is claimed that "until recently [it] has not been practical to get all the goodness from wheat But now through a simple device called the Wheat Krinkler you can enjoy the full benefits of natural wheat." It is alleged that "mills remove parts of wheat so vital to taste and health Simply because these parts will not keep after the wheat kernel is broken," either ignoring or being ignorant of the fact that bran and wheat germ by-products of flour milling keep satisfactorily if properly stored It is incorrectly claimed that "wheat turns rancid in a short time after the skin has been broken" The claim that "most of the iodine is also removed" does not recognize that the iodine content of most wheat is too low to have significance for meeting nutritional iodine needs It is stated that "only the inferior starchy portion is left" in flour, why it is rated "inferior" is not stated An unnamed food expert is claimed to state "eating devitalized, milled wheat is like eating scrap beef and throwing away the luscious, nourishing cuts" The argument continues in this vein to misuse or misstate facts to convince the reader that Krinkled Wheat prepared by grinding in the special grinder "Wheat Krinkler" sold by the purveyor will accomplish many health benefits implied or stated in the advertising

The advertising is replete with vague statements, such as "most people are astonished to learn that wheat contains all the sixteen elements comprising the human body," which but confuse and mislead the uninformed Many of these elements are present in insufficient quantity to be of any nutritional significance It is alleged that Krinkled Wheat includes the "delicate and easily digested mineral salts so vital for growth, nourishment and repair of tooth, hair and bone structure and tissue" The writer is apparently unaware of scientific nutritional facts that wheat minerals are not of value for tooth and bone structure It is incorrectly alleged that "it is because wheat and only wheat as in Krinkled form contains vitamins A, B, E and G that it is often called one of the basic foods around which other foods furnish supplemental assistance" and that "Krinkled Wheat with milk or cream gives you all the vitamins A, B, C, D, E and G" Vitamins C and D are practically lacking in this mixture It is stated that Krinkled Wheat contains "oil bran" the lubricating roughage so necessary for the complete cleansing of the intestinal tract" and that this "oil bran of Krinkled Wheat is entirely different from the harsh, dry bran that suffers a loss of fresh oil in storage." The bran of wheat is not "oil" nor "lubricating", the bran of Krinkled Wheat is not different from dried bran It is stated that "many of our off days and periods of impaired vitality are due to unbalanced diets of ready-prepared foods of doubtful nutritional value Correction does not lie in freakish diets and expensive fads but often in a return to natural foods like Krinkled Wheat Don't take tonics and patent medicine preparations you know nothing about include Krinkled Wheat in your menu It should give you new vigor new energy and increased mental efficiency It should help banish that sluggish feeling and tendency to tire easily You should sleep better and discover your recuperative powers are stronger" It is by fanciful misleading claims such as these that the advertising attempts to contribute quasimedical or therapeutic properties and specific health values to Krinkled Wheat The reader is cautioned however that there is no substitute for Krinkled Wheat Never use whole wheat flour, cracked wheat or dry bran in these recipes as results will be disappointing" This is an apparent attempt to distinguish Krinkled Wheat from the usual whole wheat products on the market but which are physical and nutritional identities The deception is made grosser by the claim that Krinkled Wheat can only be made in the patented device perfected for krinkling It is not comparable to cracked or broken wheat as prepared by old-fashioned grinders or mills

This advertising booklet as a whole, directly and by implication, is misinformative and deceptive to the public This advertising was drawn up with the criticisms and recommendations of the Committee at hand This Krinkled Wheat, therefore, is not listed among the Committee's accepted foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION



RAYMOND HERTWIG Secretary

### PEERLESS HARD WHEAT FLOUR (BLEACHED)

Manufacturer—Collin County Mill & Elevator Company, McKinney, Texas

Description—A "standard patent" hard wheat flour, bleached

Manufacture—Selected wheat is cleaned, washed, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210 Chosen flour streams are blended and bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and with nitrogen trichloride ( $\frac{1}{2}$  ounce per barrel)

Analysis (submitted by manufacturer) —

	per cent
Moisture	12.5 - 14.0
Ash	0.39 - 0.42
Fat (ether extraction method)	0.8 - 1.2
Protein (N $\times$ 5.7)	11.4 - 12.0
Crude fiber	0.2 - 0.4
Carbohydrates other than crude fiber (by difference)	74.7 - 72.0

Calories—3.5 per gram 99 per ounce.

Claims of Manufacturer—This flour is intended for commercial bread baking

### PENNANT SORGHUM FLAVORED SYRUP (A Blend of Corn Syrup and Pure Country Sorghum Syrup)

Distributor—Union Sales Corporation, Columbus, Ind

Description—A table syrup, corn syrup flavored with sorghum syrup

Manufacture—The corn syrup ingredient is prepared as described for Pennant Crystal White Syrup (THE JOURNAL, Jan 30, 1932, p 402) The sorghum syrup is prepared from sorghum cane The cane is harvested and delivered to the mills, the heads are cut off the leaves and stalks are separated in a cleaning machine The stalk so obtained is crushed and macerated The expressed juice is collected in tanks, partially neutralized with lime, heated to boiling, and filtered During the process, the juice is changed from a greenish foamy liquor to a brilliantly clear amber colored solution, which is subsequently concentrated in "vacuum" evaporators to a syrup of standard density

The corn syrup and sorghum syrup are mixed and heated at 70 C and automatically packed in friction top tins

Analysis (submitted by manufacturer) —

	per cent
Moisture	23.5
Ash	1.7
Fat (ether extract)	0.0
Protein (N $\times$ 6.25)	0.3
Reducing sugars as dextrose	34.6
Reducing sugars as dextrose after acid hydrolysis	66.6
Reducing sugars as dextrose after invertase inversion	41.2
Sucrose, by invertase method	8.4
Total carbohydrates (by difference)	74.5
Titrate acidity as HCl	0.1
Sulphur dioxide as SO <sub>2</sub>	0.002
pH	5.8

No methods are available for accurately determining the composition of syrups of this nature, therefore the foregoing analysis is roughly approximate.

Calories—3.0 per gram 85 per ounce.

Claims of Manufacturer—A syrup for all cooking, baking and table uses



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 4, 1933

## DIURNAL VARIATIONS IN EFFICIENCY

A number of standards of performance or function on the part of the body have been accepted as indexes of its normality. Perhaps the most noteworthy illustration is found in the normal body temperature. This is something that can be readily measured with comparative accuracy, and departures from the expected figures are among the fundamental physical signs of disease. Body temperature, however, even in admittedly perfect health, is subject to characteristic slight diurnal variations that cannot be directly correlated with changes in the environment. The temperature of man reaches a maximum at about 4 or 5 p. m. (37.5 C, or 99.5 F) and a minimum at about 3 a. m. (36.8 C, or 98.2 F), at a time when the bodily functions are least active. It has been observed that if the habits of man are altered so that he sleeps during the day and works during the night, the character of his diurnal temperature variation is altered and the periods of maximum and minimum temperatures become inverted.

Habits of sleep also exhibit a diurnal character. The most essential factor in causing sleep seems to be muscular relaxation, this causes a loss of proprioceptive reflexes that in activity are always functioning. Kleitman,<sup>1</sup> one of the foremost students of the subject, insists that anything that will produce muscular relaxation will lead to sleep. In the summertime there is a disinclination to engage in muscular activity because it produces warmth. One is therefore more inclined to relax the musculature and can fall asleep with ease at almost any time of the day. Kleitman remarks, by way of illustration, that a warm stuffy atmosphere of a lecture room especially if the chairs are comfortable, frequently produces sleep in some auditors, sometimes to their embarrassment. The percentage of sleepers increases if the lecturer's voice is monotonous and if the room is darkened for lantern slide projection. In explanation of the customary incidence of diurnal sleep, Kleitman believes that the cycle of day and night serves to develop in animals and man what Pavlov calls a

"natural" conditioned reflex. Darkness makes for poor vision and discourages movements. This leads to inactivity and relaxation, and sleep follows. Repeating this performance a great many times results, according to Kleitman, in the establishment of a conditioned reflex of a temporal character—relaxation at a certain time. Likewise, waking may be developed into a time-conditioned reflex. It is further averred that children are born into a social organization where diurnal sleep is the universally accepted mode of sleeping. The first habit that the mother tries to develop in a baby is that of an unbroken night's sleep. As he gets older, other functions develop a periodicity that coincides with the enforced sleep periodicity. For instance, a temperature curve develops, with a minimum at night, and produces a disinclination to night activity. Even the modest tear apparatus, Kleitman points out, stops its function at bedtime, producing dry eyes and favoring their closure. Kleitman feels certain that, under conditions of artificial illumination and twenty-four hour activity of a group, children brought up by that group could be trained into a twelve or a thirty-six hour cycle of existence, instead of the present twenty-four.

The foregoing considerations prompt one to ask whether there are other human activities that show a diurnal variation concomitant with that of the twenty-four hour cycle of sleep. In an investigation recently reported from the University of Chicago,<sup>2</sup> a number of adult persons were subjected to several simple tests at different times of the day, and variations in performance were noted as regards the length of time required to carry out a certain task, or the number of errors made in a definite period of time, or both. The tests were made five times daily, for at least twenty days. The results obtained indicate a well marked variation in performance during the day, efficiency of performance increasing up to noon or afternoon and then declining for the rest of the waking period. The body temperature varies in the same sense. There are indications that the temperature is dependent on the tonus of the skeletal muscles, in that it falls on lying down and rises on getting up. Kleitman adds that, if the variations in temperature can be used as a criterion of changes in tonic activity of the body musculature, it would appear that the gradual decrease in efficiency toward the end of the day might be due to greater muscular relaxation, which leads to a decrease in the number of proprioceptive impulses reaching the cerebral cortex and makes it increasingly difficult to maintain the state of wakefulness, irrespective of whether or not any fatiguing work was done during the day. It is hardest to keep awake during the early hours of the morning when the body temperature is lowest. Under ordinary conditions, Kleitman concludes, going to bed in the evening results in a still greater muscular relaxation, and sleep is precipitated. After all, these phenomena of human

<sup>1</sup> Kleitman, Nathaniel. Sleep, *Physiol. Rev.* 9: 624 (Oct.) 1929.

<sup>2</sup> Kleitman, Nathaniel. Diurnal Variation in Efficiency. *Science* 76: 570 (Dec. 16) 1932.

physiologic behavior are familiar from practical experience. What one fails to remember is that work and weariness play a part in determining human efficiency in a way that the individual worker—notably the intellectual worker—all too often forgets.

### RUSSIAN EXPERIENCES WITH LEGALIZED ABORTION

Russian experiences with legalized abortion as reflected in the First All-Ukrainian Congress of Gynecologists and Obstetricians, meeting in Kiev from May 23 to 28, 1927, do not seem to have been refuted or challenged by more recent reports emanating from the same sources. Verkhvatskiy,<sup>1</sup> for example, in 1931 reported 13.5 per cent instances of adnexal complications in his material of 1,242 artificial abortions. Anufrieff,<sup>2</sup> in 1931, quoted the figures presented at the congress to support his thesis that curettage of the uterus is a procedure fraught with serious consequences. The unbiased and objectively scientific attitude of the congress toward the question seems apparent.

The law legalizing economic indications for abortion in the new Russia was intended to do away with criminal abortion and to substitute for it efficient medical service. The hope was expressed at the time that instruction in measures for contraception would minimize the demand for abortion. It was further hoped that improvement in living conditions would tend to reawaken desire for children. Legalization of abortion, therefore, was to be regarded as a temporary measure. The economic justification for interruption of pregnancy was to be decided in each case by a special committee on abortion. The diagnosis was to be based on physical examination and not alone from a history. Abortions were not to be performed after the first three months of a pregnancy. The method adopted was dilation of the cervical canal with Hegar sounds and curettage of the uterine cavity.

Cervical tears and ectropion of the cervical mucosa were the most frequent complications. Perforations of the uterus occurred in only 0.04 per cent of the cases, and 75 per cent of the patients recovered with conservative treatment. In a total of 1,815 abortions there were thirteen fatalities, 0.7 per cent, a greater mortality than that which obtains in normal labor. The principal cause of death was infection. The occurrence of mild fever was noted quite commonly. Its incidence was noted more frequently when the hospitalization period was raised from three to five days. Many of the patients discharged returned several days later with severe infections. The cause of sepsis was ascribed to scraping. New infections were caused by lighting up of old infections left by previous abortions. General sepsis was four times as frequent after repeated

abortions as after one abortion, and adnexal inflammation twice as frequent. A definite increase was noted in gonorrheal infections. Another bad result of curettage was the retention of a part of conception, causing bleeding. Among the remote results, scars of the internal os led to dysmenorrhea, to stasis of menstrual blood in the tubes, and occasionally to external adenomyosis. Scars in the uterine wall could lead to a rupture in a subsequent pregnancy. The replacement of normal uterine mucosa by scars was responsible for oligomenorrhea in 74 per cent of the cases and for amenorrhea in 10 per cent, as well as for secondary sterility or habitual abortion.

Serdukov pointed out the deleterious effect of sudden loss of decidual secretion on the ovaries and the uterus. He found in the ovary a disturbed follicle function, cystic degeneration, parenchymatous atrophy and thickening of the tunica albuginea. Particularly interesting were the instances of uterine atrophy as well as of uterine hyperplasia.

Inflammatory sequelae were both numerous and various. Abortion was named as the cause in 20 per cent of cases of parametritis and adnexitis. Of 264 patients operated on for inflammatory lesions, 36.3 per cent had a history of abortions. The incidence of secondary sterility after induced abortions was 5.4 per cent. The incidence of extra-uterine pregnancy was considerably raised. According to Kirillov there were 59 tubal pregnancies following 3,790 abortions, or 1.3 per cent. Quite significant was the effect on later pregnancies. Postpartum fever occurred in 32 per cent, as contrasted with 9.5 per cent in cases in which abortion had not been performed. Duration of labor was prolonged over the normal, the period of placental expulsion was likewise much longer. Incomplete placenta, manual removal of the placenta, and placenta praevia were much more frequent. Postpartum hemorrhages were noted from five to six times as frequently, retention of membranes and subinvolution from two to three times as frequently. An increase in stillbirths was likewise recorded.

In addition to the purely local lesions, several authors emphasized certain general somatic and psychic deleterious effects. They maintain that a sudden disturbance of the functions of the ovary, the corpus luteum and the placenta constitutes a pronounced biologic trauma to the entire organism. The loss of the impulse to growth and attainment of complete sexual characteristics caused by the first pregnancy is of particular importance to the infantile and hypoplastic types. Among the psychic disturbances were noted depression, hysteria, frigidity, dyspareunia and marital discord. The following were among the more pessimistic utterances: "Chronic inflammations of the uterus and the adnexa, as well as abortions without an end is the heritage of these years." "There is no disease of the female in the causation of which abortion does not play an important

<sup>1</sup> Verkhvatskiy, S. Immediate and Remote Results of Interruption of Pregnancy in Various Years. *Arch. Ped.* 14: 17 (Jan. 1) 1911.  
<sup>2</sup> Anufrieff, A. The Question of Artificial Abortion. *Arch. Ped.* 16: 1, No. 1, p. 1951.

rôle " "When we report 140,000 abortions a year, we report just that many women on the road to invalidism " Some warn against normal deterioration and "sexual chaos " The "abortarium" was no boon to general health The consensus regarded legalized abortion as a psychic, moral and social evil The congress passed a resolution warning the rest of the country against regarding lightly a procedure fraught with such injurious effects Worst of all, criminal abortion was far from being suppressed

## Current Comment

### JERUSALEM ARTICHOKE

Recognizing that people at present are diet minded, many advertisers are concentrating on the promotion of foods Among other items is the jerusalem artichoke The *Pittsburgh Medical Bulletin*<sup>1</sup> calls attention to a newspaper advertisement describing artichokes as "The new and only non-starch vegetable garnish for your Thanksgiving turkey Highly recommended for diabetic and reducing diets " Inquiries have been received from localities widely separated regarding the virtue of the jerusalem artichoke for the diets mentioned The claim has been advanced that the artichoke, though containing 17 per cent carbohydrate, according to the tables published by the United States Department of Agriculture,<sup>2</sup> contains a sugar, inulin, which is peculiarly suited to the needs of the diabetic patient This is a claim which has frequently been made and as frequently exploded for honey, on the ground that levulose is better utilized by the diabetic patient than is dextrose, which, of course, is not the fact The hydrolysis of inulin and its subsequent utilization in the body is no different from that of other sugars, as far as the metabolism of the diabetic patient is concerned As the *Pittsburgh Medical Bulletin* succinctly remarks, "If the doctor will do the prescribing and the grocer will do the selling, this will be a safer and a better world "

### FLORIDA AND FLU

Now that influenza is agitating the public, the Florida promoters of citrus fruits are again in the field with the statement that Florida oranges help keep the flu away The advertising copy asserts that "the most effective way to resist the flu is to build up a strong alkaline reaction in your system—and this is exactly what Florida citrus fruits do!" THE JOURNAL has protested repeatedly against this type of advertising in the health field The California Fruit Growers' Exchange has shown that it is possible to advertise citrus fruits without such misleading statements Indeed, it has constantly cooperated with the Committee on Foods of the American Medical Association in revising the health claims made for California citrus fruits and in avoiding statements without scientific

basis One Florida fruit grower—Howey-In-The-Hills—has, however, at times supported the statement that his grapefruit is a specific for diabetes and the Florida Exchange has constantly urged the drinking of excessive amounts of orange juice from Florida oranges as a preventive of influenza Of course, not all Florida producers of citrus fruits approve these claims The charge must be made specifically against the group in the Florida Citrus Fruit Exchange and the advertising agency that prepares its copy The truth is that a considerable number of physicians believe that mild alkalization aids in the treatment of the common cold and of influenza, but there is not the slightest scientific evidence to support the claim that constant alkalization of the system will prevent influenza There are so many factors involved in infection with this disease that proof is difficult There is, moreover, plenty of evidence to show that people who have been taking considerable amounts of orange juice frequently develop influenza The pity of it is that a fruit of this character, susceptible to such excellent advertising on established facts, should be exploited with advertising that is bound to bring discredit on the product itself because of the disappointment of users when the claims are shown to be untrue

### UNITED MEDICAL SERVICE, INC

True to the prediction made in these columns a few months ago, the business men who established the corporation known as United Medical Service, Inc, began this week full page advertising with an appeal based mainly on price As might also have been anticipated, the advertising leans heavily on the suggestions of the majority report of the Committee on the Costs of Medical Care With characteristic impudence the promoters perverted to their purpose a misquotation from an address delivered to physicians by the secretary of the American Medical Association—much cited by the same committee—no doubt with the idea of lending to the announcement a medical respectability which it cannot have Worst of all, a concluding paragraph of the announcement says

In announcing United Medical Service to the public we wish to emphasize that it is not competitive with existing charitable, philanthropic, educational and tax-supported organizations, or physicians in private practice

This outrageous misrepresentation, like the rest of the announcement, seems calculated to deceive A reputable physician does not advertise The purpose of the advertising on the basis of price appeal must be to attract vast numbers of patients away from their physicians Sooner or later it must be found that assurance of a profit to the business men and commercially minded physicians behind this concern will demand skimping of some services and overselling of other services to the misguided persons who will respond to the advertisement It would be folly to analyze here for the benefit of the public the professional capacity of the staff of the institution It embraces not one name of any note in the field of clinical competence or professional achievement Finally, what assurance has been offered that this commercial

<sup>1</sup> Pittsburgh M. Bull. Dec. 3, 1932, p. 849

<sup>2</sup> Chatfield, Charlotte and Adams, Georgian. Proximate Composition of Fresh Vegetables, Circular 146, U. S. Department of Agriculture, January, 1931

setup in any way maintains what both the majority and minority reports of the Committee on the Costs of Medical Care recognized as essential in any good form of medical practice—the personal relationship between patient and physician necessary to proper, sympathetic, competent medical care?

## Medical Economics

### NEW FORMS OF MEDICAL PRACTICE

#### 12 Health Preservation Foundation of Los Angeles

This scheme is an outgrowth of the Medical Diagnostic Association, which, according to the statement of the December 1932 Bulletin of the Association, "was organized in 1924, under the name Co Operative Diagnostic Laboratories, by a group of physicians who felt the need of a jointly owned business-like organization to handle the impersonal phases of their practice.

"Its membership is limited to one thousand, and eligibility to membership in the national medical or dental societies is prerequisite to membership in this Association."

The plan is described in the December 1932 Bulletin as follows

The Organization Committee of the recently formed HEALTH PRESERVATION FOUNDATION, at its last meeting arranged a schedule of dues which its lay members will pay for services and fixed the income limits of eligibility for such service

These dues have been set at sums which will surely attract those eligible and will represent no hardship to them, and still will be ample to provide enough funds to recompense the individual members of the professional staff for their services (a fact which has been demonstrated by many years of operation of numberless medical services by fraternal organizations large corporations, etc.)

The income limits chosen are such as to offer no competition with private practice.

The principal objects of the plan are

- 1 To bring back into personal relationship with the doctor (in his own office and hospital) a large and growing percentage of the public now being cared for by other agencies
- 2 To foster the strictly competitive private practice to medicine and to extend that practice among as large a percentage of the public as may be possible (including the class which is now largely cared for by irregulars and institutions)
- 3 To foster a better public understanding and appreciation of the medical profession and its services to humanity
- 4 To present to the members of the staff (without burden to any of them) opportunity for
  - a Increased experience
  - b More consultation
  - c That most important factor in building practice i e., more grateful patients

#### DUES

The dues or premiums for membership are based on the single individual with an income of not more than \$65.00 per month who will pay 75c per month for service. Each additional dependent will increase the premium 50c per month (allowing \$15.00 increase in income limit for each additional dependent)

Single members with monthly income of \$65.00 or less	\$0.75 per mo
Member and one dependent with income of \$90.00 or less	1.25 per mo
Member and two dependents with income of \$105.00 or less	1.75 per mo
Member and three dependents with income of \$120.00 or less	2.25 per mo
Member and four dependents with income of \$135.00 or less	2.75 per mo
Member and five dependents with income of \$150.00 or less	3.25 per mo

#### FEES

The following schedule of fees is under consideration

\$ 3.00 for office consultation
4.00 for visit outside of office
5.00 for night call
25.00 to \$75.00 for minor surgery (tonsillectomy, etc.)
250.00 for major surgery
10.00 for consultation
25.00 for assistance in major surgery
10.00 for assistance in minor surgery
10.00 for anesthetic in minor surgery
5.00 for anesthetic in major surgery

#### ELECTION OF OFFICERS AND DIRECTORS

An election of officers and directors of the professional staff will be held at an early date. President Vice President Second Vice President Secretary Assistant Secretary Treasurer Assistant Treasurer and a Board of nine Directors will be elected by the members.

There will also be an election among the lay members who will elect their officers and delegates to confer with the staff officers at regular intervals

The staff will be limited to three hundred members for the first year, or until such time as the administration problems have been worked out. There are still some founder memberships open for subscription

K. L. Dieterle, president of the Medical Diagnostic Association, discusses some further features of the plan in the June 1932 Bulletin

Have this panel choose a representative who is capable of contacting the lay individual of minimum income—say \$200.00 per month or less—and organize them into a group of 10,000 or more, who are desirous of obtaining medical care for a charge they can afford to pay—say \$2.00 per month. This would provide a monthly fund of \$20,000 to be paid out for nothing but medical care because the panel is already paying its rent, nurses salaries equipment expense and general overhead

A fee schedule should be created based on average fees—say \$2.00 per office visit \$3.00 for residence call, \$50.00 for a tonsillectomy, \$250.00 for a laparotomy, etc. Each month the members of the panel would render (to the fund) their statements based on the fee schedule and if the sum total of these equaled \$15,000.00 then each member would be paid at fee schedule rates, and the surplus placed in a fund for such emergencies as an influenza epidemic, etc., and if the statements totaled \$100,000.00, then each would receive his pro-rata share, or 20c on the dollar

In the December 1932 issue is the statement that "There has not been and will not be any expense to the Medical Diagnostic Association in connection with this venture. This Association has no relationship to the Foundation except as sponsor and with the further exception that the staff membership of the Foundation is at present open only to members of the medical Diagnostic Association"

Further details as to organization and operation are given in the August Bulletin

#### CLASSES OF MEMBERSHIP

The membership will be divided into three main classes—1, Staff or professional 2—Participating or lay, and 3—Sponsors. The Sponsor's membership will be made up of individuals or organizations such as the Chamber of Commerce the Community Chest, charity associations etc., and public spirited charitably inclined individuals who desire to support financially or otherwise the principles upon which the organization is founded

The Sponsor's membership should be a means of creating a permanent fund (which could provide for hospital beds etc.) and other funds from which the association's income could be supplemented. The personnel of this class of membership would do a great deal to define the character of the organization and remove it from the mercenary group practice or clinical class

The Staff membership will be limited to regular physicians and surgeons, licensed to practice in the State of California who are members of or eligible to membership in the Medical Diagnostic Association and who can meet the professional standard which will be required by the Foundation. The first 300 of this class of membership will be known as the Founder members. The Foundation will limit its staff members to 300 charter members until its details of operation are solved. We believe that we can hasten the time when all who desire membership may avail themselves of it by limiting ourselves at first to a small staff

Staff membership will be of two classes—1 a staff member 2, an associate or consulting staff member. The staff membership will be made up of those who desire to care for the participating members. They will make up the greater number and their names will appear on a list arranged alphabetically containing their telephone numbers office hours and office addresses. A list of the Staff will be furnished every Participating member from which he may choose his physician

The Associate or Consulting Staff membership will be made up of specialists or older men who cannot devote the time required but who are willing to be called upon for consultation by any staff member. A member of the Associate staff must take part in all surgery in the capacity of surgeon or assistant. No surgery will be done without first having an Associate Staff member in consultation who must agree before any surgical procedure can be performed.

A list of the Associate or Consulting Staff membership will be furnished each Staff member to make available to him a consultant or assistant. The list will be arranged alphabetically according to specialties. This list will not be available to the Participating member, its purpose being solely to provide the Staff members with a list of men competent to act as consultant or assistant in the various specialties. A member of the Consulting or Associate membership may have his name on both lists should he desire to personally treat Participating members in which case his specialty will not appear on the Participating membership list.

Eligibility as an Associate Staff member will be based upon ability and experience to be judged at first by a committee and later by furnishing case histories or other proof of ability, such as is the custom with the American College of Surgeons

The Participating memberships will be open to the lay individual of small means. No limit will be placed upon the number in this class. The membership will eventually entitle the holder in good standing (as described in the By-Laws) to all medical care and hospitalization (the choice of a physician and the right to have a consultant prior to any surgical procedure.

#### VOTING AND PROPERTY RIGHTS

The voting and property rights of the different classes of membership will not be equal

1 The Participating members will be the owners of all the assets of the corporation but they will have no vote. They will elect at annual

elections, members of an Advisory Board, composed of 6 members, each to serve for three years, two of whom shall be elected annually. This Board may recommend changes of policy or operation to the executive body, but it shall not have executive power unless its demands or suggestions shall first receive a 90% favorable vote of the Participating members. This must be obtained at an annual or special election.

2 The Sponsor's memberships will be in the nature of an Honorary Membership, which will have no voting power or property rights.

3 The Staff Memberships will have no property rights, but they shall have the voting power of the foundation and its management and control for the benefit of all three classes of memberships, subject to the control of 90% vote of the Participating Membership. The voting power of the Staff Membership will be vested in an Executive Board composed of 5 members each serving 5 years, one to be elected at each annual election.

#### COMMENT

The merits of the plan are

1 Insistence on membership in medical and dental associations insures a fairly high standard of service and professional ethics.

2 It will provide medical service for low income groups with less financial burden to the patients and greater security of at least a limited payment to the practitioner.

3 It claims to insure freedom of choice of physicians within a comparatively large group.

4 According to the initial announcement it would seem to avoid the evils of lay control and retain all the management within the medical profession.

Its principal defects are

1 It tends to divide the membership of the county medical society and to create a preferred group controlling a section of the market for medical services secured through solicitation of members and their adherence to a contract.

2 Such a partial monopolization of any considerable section of the field for medical practice in any locality would be in the nature of "unfair competition" with those excluded, especially when such exclusion is not based on qualifications or the opinion of patients but on membership in a previously existing organization, and when the number of physicians admitted is so closely restricted.

3 It would be a miracle if such a situation did not result in divisions and controversy within the county medical society.

4 It aligns certain civic, charitable, social, business and industrial organizations with a selected percentage of the profession. The inclusion of this element, with the use of a "representative who is capable of contacting the lay individual of minimum income," forecasts the use of pressure and advertising as means of promotion.

## Association News

### THE MILWAUKEE SESSION

Applications for Space in the Scientific Exhibit to Close, February 13

Attention is directed to the fact that applications for space in the Scientific Exhibit at the Milwaukee Session close, February 13. The Committee on Scientific Exhibit will then pass on all applications received and assign space. Application blanks may be obtained from the Director, Scientific Exhibit, 535 North Dearborn Street, Chicago, Illinois.

### MEDICAL BROADCAST FOR THE WEEK

#### American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 9 45 to 9 50 a m (central standard time) over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

February 6 Food Advertising—Good and Bad  
February 8 A Scout is Healthy

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

February 11 Cosmetics

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### CALIFORNIA

**Bills Introduced**—A 317, to amend the state narcotic drug act, proposes (1) to require those practitioners authorized by law to prescribe, administer or dispense narcotic drugs, to preserve for not less than two years a record in a stated form of the narcotic drugs prescribed, administered or dispensed, (2) to provide that in any proceeding under this act proof that the defendant had in his possession at any time a greater amount of drugs than accounted for by the record referred to shall constitute prima facie evidence of guilt, (3) to penalize any person for possessing a false or fictitious prescription or one that has been altered by any person other than the prescribing physician, dentist or veterinarian, and (4) to provide a procedure for the forfeiture of vehicles used in the unlawful transportation of narcotic drugs. A 477 proposes to repeal "an act to regulate the practice of osteopathy in the state of California, and to provide for a state board of osteopathic examiners, and to license osteopaths to practice in the state, and punish persons violating the provisions of this act," which became a law without the governor's approval, March 9, 1901. At the present time, however, osteopaths are licensed under the authority of the osteopathic initiative act, adopted in 1922. A 313, to amend the provisions of the medical practice act with respect to chiropody, apparently seeks to permit chiropodists to employ mechanical appliances of any nature, or any forcible means, for the correction of any deformity or malimposed bones of the feet, but forbids the treatment of fractures of the bones of the foot or the application of splints or casts.

### CONNECTICUT

**Personal**—Dr Charles B Horton, New York, has been appointed medical officer of the State School for Boys at Meriden.—Dr Charles N Denison has been appointed health officer of New Hartford, succeeding Dr John R Lee. Dr Wilbur J Moore succeeds Dr Denison as health officer of Cheshire.

**Bill Introduced**—H 97 proposes to create a board of examiners in chiropody and to regulate the practice of chiropody. The board is to consist of one member of the medical examining board and one member of the Connecticut Podic Society. "Chiropody, or podiatry, shall be held to be the diagnosis of foot ailments and the practice of minor surgery upon the feet, limited to those structures of the foot superficial to the inner layer of the fascia of the foot, the dressing, padding and strapping of the feet, the making of plaster models of the feet and the fitting and adjusting of rigid, semirigid and flexible appliances thereto, and the palliative and mechanical treatment of functional disturbances of the feet as taught and practiced in the schools of chiropody recognized by" the board.

### DELAWARE

**Bill Introduced**—H 15 proposes to create a state board of examiners of beauticians and to regulate the practice of beauticians. Licentiates are to be authorized to give "treatments affecting or acting upon the skin of the face, scalp or body" and to use electrical appliances and other devices in connection with any of the authorized treatments and practices.

### DISTRICT OF COLUMBIA

**Bacteriologists Honored**—An inaugural banquet honoring the three scientists for whom the society was named was given by the Smith-Reed-Russell Society of the School of Medicine, George Washington University, January 13. Drs Theobald Smith, retired director, department of animal pathology of the Rockefeller Institute, Princeton, N J and Frederick F Russell, director of the International Health Division of the Rockefeller Foundation, were present. Dr Walter Reed, who died following the completion of his experimental work on yellow fever, was honored posthumously through Col Albert E Truby, who represented Dr Reed's son, Col Walter L Reed, who was unable to attend. The three men were professors of bacteriology at George Washington University during the period from 1886 to 1910. The Smith-Reed-Russell Society is composed of students in the three upper classes whose scholastic average is 86 or above.

## GEORGIA

**Bill Introduced**—S 80, to amend the workmen's compensation act, proposes to require an employer to furnish to an injured employee necessary medical and hospital attention during the entire period of disability, instead of only thirty days as now required by law. The employer's liability is ordinarily to be limited to \$100 but the Department of Industrial Relations may order additional medical and hospital expenses not to exceed \$500.

## IDAHO

**Physicians in State Legislature**—The following five physicians are serving in the Idaho legislature during the present session

Owen T. Stratton, Salmon senate, graduated from Barnes Medical College St. Louis in 1906  
 Frank B. Evans, Sandpoint senate, Northwestern University Medical School Chicago 1904  
 Owen D. Platt, St. Maries senate, University of Nebraska College of Medicine 1903  
 Mary A. Callaway, Boise lower house, Fort Worth School of Medicine 1903  
 Dailey C. Ray, Pocatello lower house, Hospital College of Medicine, Louisville Ky 1902

## ILLINOIS

**Bills Introduced**—H 161 proposes to make it the duty of every physician, midwife or nurse who attends or assists at the birth of a child, to instil or have instilled in each eye of the new-born baby, as soon as possible and not later than one hour after birth a 1 per cent solution of silver nitrate or some other equally effective prophylactic for the prevention of ophthalmia neonatorum approved by the state department of public health. S 172 proposes that expenses attending the last illness, including physicians' bills to the amount of \$250, funeral expenses and necessary costs of administration, be given a priority over all other claims in the distribution of a decedent's estate.

**New State Health Officer**—Dr. Andy Hall, Springfield, has resigned as health officer of Illinois and Dr. Frank J. Jirka, Chicago, has been appointed to succeed him. Dr. Hall, who completed a four year term as state health officer, had previously been health officer of Mount Vernon for about the same length of time. He was also mayor of Mount Vernon. He is a past president of the Jefferson-Hamilton County Medical Society and of the Southern Illinois Medical Society, at one time he was secretary of the county medical society. Dr. Hall has three sons who are physicians. Dr. Jirka, who graduated from Northwestern University Medical School in 1910, is assistant professor of surgery at the University of Illinois College of Medicine, Chicago.

## IOWA

**Bills Introduced**—S 128 and H 128 propose to accord hospitals caring for persons injured through the fault of another, liens on all rights of action, suits, demands, judgments, or compromises or settlements, which may accrue to the injured persons by reason of their injuries.

## KANSAS

**Bills Introduced**—H 153 proposes that local health officers shall not make any sanitary inspection of schools or inspections of 'the public health' of their students except on the request of local school boards, which are to pay all the expenses of such inspections. H 198 and S 146 to amend the nursing practice act propose (1) to require all registered nurses to register annually and to pay an annual fee of \$1, and (2) to define an accredited training school for nurses as one requiring its students to be high school graduates and whose training includes at least 450 hours of theoretical instruction.

**Society News**—Dr. Oliver H. McCandless, Kansas City, Mo., addressed the Clay County Medical Society in Clay Center Dec. 14, 1932 on epitheliomas.—The Douglas County Medical Society heard Raymond A. Schwegler, Ph.D., dean of the school of education, University of Kansas, discuss education and medicine at its meeting Dec. 1, 1932.—Nutritional Disturbances of Children was the subject of Dr. Harry M. Galka, Kansas City, Mo., before the Miami County Medical Society in Proctor Dec. 14, 1932 and 'Focal Infection' that of Dr. Charles C. Conover, Kansas City, Mo.—At a meeting of the Southern Kansas Medical Society in Parsons Dec. 8, 1932, Drs. Langman P. Smith, Neodesha, and Onnie E. Stevenson, Oswego, spoke on diabetes and Drs. Lewis D. Johnson, Canaan, and Howard I. Marchbanks, Pittsburg, appendicitis.

## LOUISIANA

**Dr. Castellani Appointed Director of Ross Institute**—Dr. Aldo Castellani, professor of tropical medicine and head of the department, Louisiana State University Medical Center, New Orleans, has been appointed director-in-chief of the Ross Institute and Hospital, London, succeeding the late Sir Ronald Ross. Dr. Castellani will continue his connection with the Louisiana medical center. He has been director of tropical medicine and dermatology at the Ross Institute for many years.

**Society News**—Cancer in relation to the specialties indicated was discussed by the following physicians at a recent meeting of the East Baton Rouge Parish Medical Society: Clarence A. Lorio, urology, Thomas S. Jones, surgery, H. Guy Riche, internal medicine, Louis I. Tyler, pediatrics, Carl Austin Weiss, ear, nose and throat, Rufus Jackson, eye, John L. Beven, laboratory, Thomas J. McHugh, gynecology and obstetrics, Edward O. Trahan, history, and Lawrence D. Landry, D.D.S., dentistry.—Drs. Carl A. Weiss, Sr., and Edward O. Trahan, Baton Rouge, addressed the East and West Feliciana Bi-Parish Medical Society in Clinton recently on "Tuberculosis of the Eye, Ear, Nose and Throat" and "Bacterial Endocarditis," respectively.

## MAINE

**Bill Introduced**—H 91 authorizes the governor to appoint a commission to study the question of medical education and the advisability of establishing a medical college in the state.

## MARYLAND

**Editor of Annals Appointed**—Dr. Maurice C. Pincoffs, professor of medicine, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, is the new editor of the *Annals of Internal Medicine*, official journal of the American College of Physicians, he will assume his duties with the February issue.

**Gift to Dr. Kelly**—Dr. Howard A. Kelly, professor emeritus of gynecology, Johns Hopkins University School of Medicine, Baltimore, was recently bequeathed \$100,000 by a former patient, Miss Kate Gleason Rochester, N. Y., as a tribute to his work with radium in the treatment of cancer. The bequest will be distributed among the unemployed and others in need, it was stated. Dr. Kelly was professor of obstetrics and gynecology at Johns Hopkins from 1889 to 1899, and professor of gynecology from 1899 to 1919. Since that time he has been professor emeritus of gynecology.

## MASSACHUSETTS

**Health at Fall River**—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a population of 37 million, for the week ended January 21, indicate that the highest mortality rate (231) appears for Fall River and for the group of cities as a whole, 129. The mortality rate for Fall River for the corresponding week in 1932 was 118 and for the group of cities, 115. The annual rate for the eighty-five cities for the three weeks of 1933 was 133, as against a rate of 122 for the corresponding period of 1932. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The facts that some cities are hospital centers or that they have large Negro populations may tend to increase the death rate.

**Bills Introduced**—S 113 proposes to prohibit experimenting or operating on a live dog for any purpose other than the healing or curing of that dog. H 370 proposes to validate the illegal actions of the board of registration in medicine in registering as qualified physicians, between March 10, 1917, and Jan. 1, 1933, graduates of medical schools giving courses of instruction of less than thirty-six weeks in each year of a full four years' course, as is required by the medical practice act. H 385 proposes to require every asylum, hospital or school having more than ten inmates located above the first floor, in any city, town or district having a general fire alarm station, to be equipped with a fire alarm box. H 755 to amend the workmen's compensation act, proposes that the department of industrial accidents may appoint a duly qualified physician who is not employed in any capacity by an insurance company to examine injured employees and report to the department. H 926 proposes to provide for the licensing, after examination by the board of registration in medicine, assisted by two chiropractors, of persons to practice chiropractic. Chiropractic is defined as the external treatment of the human spine by mechanical or manual means. Persons so licensed shall not be permitted to prescribe or administer alcohol or drugs for internal use or to perform operations in surgery, or to engage in the practice of obstetrics. H 902,



to amend the workmen's compensation act, enumerates an extensive list of occupational diseases which it proposes shall be compensable. H 1114, to amend the workmen's compensation act, proposes that hospitals supported in whole or in part by contributions from the commonwealth or from any town, incorporated hospitals offering treatment to patients free of charge, and incorporated hospitals conducted as public charities shall be precluded from recovering any charges for services rendered to injured employees, in excess of the amount approved by the department of industrial accidents.

### MICHIGAN

**Bill Introduced**—H 140, to amend the workmen's compensation act, proposes, in effect, to make compensable all occupational diseases contracted in the course of any employment covered by the act.

**State Officers Reelected**—For the twenty-first consecutive year, Dr Frederick C Warnshuis, Grand Rapids, was reelected secretary of the Michigan State Medical Society, January 12, in Detroit. Dr William A Hyland, Grand Rapids, was reelected treasurer and Dr James H Dempster, Detroit, reelected editor. A special meeting of the house of delegates of the state society will be held the last of March in Detroit to receive the report of the committee on survey of state medical and health services.

**Health Work by Foundation Extended**—The experimental health program carried on by the W K Kellogg Foundation, Battle Creek, has been extended to Eaton County, according to newspaper reports, January 12. Following the foundation's plan carried out in Allegan and Barry counties, a unit will be established in Eaton County to supervise child health work in cooperation with the schools. A minimum of \$12,000 annually will be allocated by the foundation to the county for the work, which will include the services of a health officer, public health nurse, sanitary inspector and a clerk. The health unit has received the endorsement and support of the Eaton County Medical Society, newspapers state. Through the W K Kellogg Child Welfare Foundation founded in 1930, children who are subnormal mentally or physically will receive scientific treatment to correct their defects or, if this is not possible, special training to minimize their handicaps. The work to be done largely in cooperation with the schools.

### MINNESOTA

**Bills Introduced**—S 290 proposes to allow physicians to prescribe alcoholic liquors under the same general restrictions that are imposed by the National Prohibition Act. H 394, to amend the pharmacy practice act, proposes to define drugs, medicines and poisons, within the meaning of the act, as follows: "'Drugs' means all substances used as medicines or in the preparation of medicines and such material as may be used in the treatment of diseases, 'medicines' means drugs or chemicals or preparations thereof, in suitable form for the prevention, relief or mitigation of disease, when used either internally or externally by man or for animal, 'potent drugs or poisons' means any substance which applied externally, or taken internally, may impair the normal function of any tissues or organ of the body." This bill proposes also to eliminate that provision of the present law which states that a dealer whose shop is more than two miles from a drug store is not prevented from selling any commonly used medicine or poison which has been put up for sale by a registered pharmacist.

### MISSOURI

**Bills Introduced**—S 3 and S 4 propose to vest in the commissioner of health all the rights, powers and duties now exercised by the state boards of optometry and of nurse examiners. H 98 proposes that all drugs and chemicals of coal tar origin, intended for human medication, except when prescribed by a licensed physician, shall be plainly labeled with the true English name and bear a statement as to their coal tar origin, their dangerous effects and the names of at least two active antidotes. S 20 proposes to create a state commission for the rehabilitation and education of the indigent crippled and physically handicapped children of the state. H 26, to amend the medical practice act proposes that the license of a practitioner cannot be revoked for producing criminal abortion until after he has been convicted of that crime. The present law permits revocation whether or not criminal proceedings have been instituted. S 14 to amend the pharmacy practice act, proposes that members of the board of pharmacy serve for a term of four years rather than the five year term now provided by law and be subject to the power of removal by the governor at his pleasure.

### NEW HAMPSHIRE

**Bills Introduced**—H 68 proposes to authorize the attorney general to employ a finger print and criminal identification expert, to be designated Superintendent of the Bureau of Criminal Apprehension and Identification. He may employ also three experienced investigators of crime, to operate under the superintendent, for the investigation of crimes throughout the state. This seems to be a movement in the direction of the establishment of a criminologic institute, advocated by the American Medical Association. H 70 limits the right of corporations to own pharmacies to corporations owning and operating pharmacies in the state at the time of the passage of the act. Such corporations are to be permitted to continue to operate them and to establish additional pharmacies. H 122, to amend the chiropody practice act, proposes (1) to define a chiropodist as "one who examines, diagnoses, or treats medically, mechanically, or surgically the ailments of the human foot, except the amputation of the toes or foot, or the use of anesthetic other than local", and (2) to eliminate the present requirement that an applicant must have a high school education in addition to having been graduated from a recognized college of chiropody. H 286, to amend the pharmacy practice act, proposes to provide a penalty for persons, firms or corporations maintaining pharmacies, drug stores or apothecary shops, or places designated or advertised as such, unless the owners are registered pharmacists or employ registered pharmacists to supervise such places. H 318, to amend the workmen's compensation act, proposes to require an employer to render to an injured employee necessary medical and hospital services during the entire period of disability, instead of the fourteen day period now required.

### NEW JERSEY

**Bill Introduced**—S 46, to amend the workmen's compensation act, proposes to eliminate the statutory definition of hernia, as ordinarily a disease and only rarely an accident and as presumptively of either congenital or slow development in the absence of a tear or puncture of the abdominal wall. Proof of the industrial origin of a hernia, the bill proposes, may be by preponderance of evidence and need not as at present be conclusive proof. Time for the manifestation of symptoms after the event alleged to have caused the injury, within which industrial origin is to be presumed, is to be extended. Detailed provisions of the present law defining the relative responsibilities of employer and employee for the treatment of an industrial hernia will be eliminated if this bill is passed.

### NEW YORK

**Bills Introduced**—A 354, to amend the medical practice act, proposes to permit the board of regents to restore a license to a person whose license has been forfeited by conviction of a felony, even though the conviction was for misconduct in his professional capacity, if he is pardoned by the governor of the state or by the President of the United States. A 345, to amend the pharmacy practice act, proposes that every place in New York City in which drugs, chemicals, medicines, prescriptions or poisons are retailed or compounded shall be deemed a pharmacy, within the meaning of the act, and be under the personal supervision of a registered pharmacist. S 433 proposes that no hospital, supported wholly or in part at public expense, shall hereafter charge any fee or other compensation for medical services rendered while operating a clinic to which the public is invited.

### New York City

**Course on Eye Conditions**—The extension division of New York University announces for welfare workers, public health nurses and other interested persons a course on eye conditions to begin February 7 and extend through May, presented with the cooperation of the New York State Department of Social Welfare. Lectures will be held weekly at University and Bellevue Hospital Medical College. Among the instructors will be Drs Conrad Berens, John M Wheeler, Webb W Weeks, Bernard Samuels and Willis S Knighton.

**Portrait of Dr Polak**—At the meeting of the Medical Society of the County of Kings, January 17, a portrait of the late Dr John Osborn Polak was presented to the Brooklyn Gynecological Society to be hung in the auditorium of the society's building. The portrait, which was given by Dr Polak's daughter, Mary, was unveiled by Dr Alfred C Beck. Presentation addresses were made by Drs Frank L Babbott Jr and George Gray Ward Jr. At this meeting Dr John J Masterson, incoming president of the county society, delivered his inaugural address on "Medicine—An Economic Survey," and Dr Edward L Keves spoke on syphilis in pregnancy.

## NORTH CAROLINA

**Bills Introduced**—S 58 and H 120 propose to levy an annual occupational tax of \$25 on practicing physicians, dentists, osteopaths, chiropractors, chiropodists and optometrists. If receipts from practice are below \$1,000, the tax is to be \$12.50. The licenses of practitioners failing to pay this tax may be revoked.

**Bill Passed**—S 102, to amend the medical practice act, was passed by the Senate, January 25. It proposes to authorize the revocation of the licenses of those licentiates who have been guilty of unprofessional and dishonorable conduct, unworthy of and affecting the practice of medicine, or who have been convicted in any court, state or federal, of criminal offenses involving moral turpitude. The provision in the present law permitting the board to revoke the licenses of licentiates guilty of wilful violations of the rules and regulations of the board, the bill proposes to eliminate. The findings and action of the board with respect to revocation is to be final and conclusive and not subject to appeal to the courts.

## NORTH DAKOTA

**Bills Introduced**—S 104, to amend the medical practice act, proposes (1) to remove the express prohibition against osteopaths prescribing and administering drugs and performing surgery, (2) apparently, to permit osteopaths, chiropractors and chiropodists to use the title "doctor", (3) to permit any person to prescribe or administer "food, water, light, heat, air, exercises, baths or massage to any person for the prevention, relief or cure of any physical or mental ailment", and (4) to exempt midwives from the provisions of the act so long as they do not prescribe or administer drugs or medicines, perform surgical or physical operations except massage, or hold themselves out as physicians. S 103 proposes to create a board of examiners in naturopathy and to regulate that practice. Naturopathy, which under this bill includes physiotherapy, is defined as a healing system the science and are [sic] of applied natural therapeutics hygiene, sanitation or combination thereof which enables the naturopathic physician to direct, advise or prescribe food, water, light, heat, color, exercises, baths, active and passive manipulation, non-toxic herbs, roots and barks, electrical and mechanical instruments or applied natural sciences to assist nature to restore a normal state of health." S 105 proposes to repeal the present osteopathic practice act and to enact a new one which raises the educational requirements for applicants and apparently, would grant osteopaths greater rights than are now accorded. The bill defines osteopathy as "the art and science of applied therapy as heretofore or hereafter taught by the recognized colleges of osteopathy except major surgery." The bill proposes to permit osteopaths to practice within the confines of institutions maintained wholly or in part by public funds.

## OHIO

**Bill Introduced**—H 42 to amend the workmen's compensation act proposes to make compensable any illness or disease arising out of an employment covered by the act.

**New Professorship of Surgery**—The board of trustees of Western Reserve University School of Medicine, Cleveland announced January 13 that an anonymous gift of \$300,000 had been accepted for the establishment of the Oliver H. Payne chair of surgery. Dr. Carl H. Lenhart, who was appointed professor and head of the department of surgery Dec. 6, 1932, was appointed the first to occupy the new professorship. The foundation was established in memory of the late Col. Oliver H. Payne, former business man of Cleveland who made many gifts to medicine and education. With H. M. Hanna he founded the H. K. Cushing laboratory of experimental medicine at Western Reserve. He died in 1917.

## OKLAHOMA

**Bills Introduced**—S 54 to amend the pharmacy practice act proposes (1) to authorize the board of pharmacy to license annually persons not registered pharmacists to sell any drugs or persons patent or proprietary medicine or commonly used household drugs in packages or containers which have been prepared for sale to consumers by pharmacists, manufacturers or wholesale druggists who manufacture the same. Apparently under the present law persons other than registered pharmacists may sell the drugs and chemicals enumerated with it license from the board of pharmacy. S 138 proposes to prohibit the cultivation and the selling or other distribution of marijuana, cannabis or hash or any preparation made from the plant, genus Cannabis. Pharmacists are to be allowed to sell the drug in the form of written prescriptions

of physicians, dentists or veterinary surgeons. S 139 proposes that any person who is above 31 years of age and of good moral character, and who has had ten years' practical experience in compounding physicians' prescriptions in the state, may become a registered pharmacist on passing the examination required by the pharmacy board.

## OREGON

**Bill Introduced**—H 101, to amend the osteopathic practice act, proposes that applicants for license be examined and licensed, and that osteopathic licenses be revoked in proper cases, by an independent board of osteopathic examiners. These functions are now exercised by the board of medical examiners, on which there is one osteopath.

## PENNSYLVANIA

**Health Director Appointed**—Dr. William W. McFarland was appointed director of health of Pittsburgh, January 24, to succeed the late Dr. Charles B. Maits. Dr. McFarland has been a medical supervisor in the city bureau of child welfare for the past two years and has been a member of the school medical inspection staff since the bureau was established in 1910. He is a native of Pittsburgh and a graduate of the University of Pennsylvania School of Medicine, class of 1902.

**Bills Introduced**—H 168 and S 178, to amend the workmen's compensation act, propose that any physician or hospital that has furnished medicines, supplies or services to an injured employee shall be deemed a party in interest and have standing before the workmen's compensation board and the courts to present his or her claim. H 360 proposes that coroners in counties of the third class shall be licensed physicians and, in addition to performing the duties now required of coroners, shall act as medical advisers for the county homes and for the county jails of their respective counties. H 237, to amend the workmen's compensation act, proposes to make compensable all occupational diseases contracted in any employment covered by the act. H 448 proposes to require hospitals in which maternity cases are treated to take the finger prints of all infants born there and of their mothers, a copy of which is to be sent to the department of health.

## Philadelphia

**Society's Views on Economic Questions**—The board of directors of the Philadelphia County Medical Society at a meeting, January 11, adopted unanimously a set of resolutions dealing with the principal economic problems confronting the medical profession. The resolutions demand remuneration for physicians who serve in free clinics and dispensaries and condemn the maintenance of such institutions except for the indigent sick. They analyze the features of contract practice that are considered unethical and urge that all physicians now engaged in it or contemplating such action investigate the conditions of their service carefully and be guided by the Principles of Medical Ethics of the American Medical Association. Compensation practice as administered at present in Pennsylvania is condemned and members of the society are urged to cease activities connected with it. The committee claims that the compensation laws have resulted in solicitation of patients, underbidding for contracts, interference with choice of physicians and other abuses contrary to the ethics of the medical profession. Closer cooperation with the city department of health along the lines established in Detroit is approved. In one section the resolutions declare that solicitation of patients for periodic health examinations and immunization procedures is considered ethical. Representation of medical staffs of hospitals on boards of trustees is recommended in order that physicians may have larger voice in conduct of the institutions. Their voice unqualified disapproval of contract practice as found in industries and recommend investigation of the legality of corporation clinics. They deplore the present practice of giving free information to insurance companies and urge that steps be taken to abolish it. Encroachment on the field of medical practice by lay workers is also considered and it is suggested that violations be reported to the state medical board for elimination. Finally, the committee recommends enlargement of the scope of graduate instruction to include techniques of public health work, first aid and related fields.

## SOUTH DAKOTA

**Bill Introduced**—H 33 apparently is an attempt to permit the state board of health to consist of practitioners of the healing art. Membership is now limited to physicians. If this bill is enacted osteopathic representation on the state board of health will be mandatory.

## TEXAS

**Personal**—Dr James W Bass, Dallas was elected president of the Texas Public Health Association at the recent annual meeting in Dallas—Dr John T Harrington, Waco, was elected president of the board of trustees of Baylor University, recently—Dr Thomas C Lynch, Wichita Falls, was recently appointed health officer of Wichita County

**Bill Introduced**—H 153, to amend the law regulating maternity hospitals, proposes to authorize injunctions to restrain the operation of any maternity hospital which (1) is operated without a license, (2) is guilty of selling or trafficking in babies, (3) harbors persons of unsound mind or suffering from infectious or contagious diseases, except women suffering from venereal disease, or (4) is maintained for any other purpose than the sheltering of infant children or the reception, care and treatment of pregnant women

## VERMONT

**Bill Introduced**—H 7, authorizes the state board of health to expend \$8,000 during the fiscal year 1934, and \$16,000 during the fiscal year 1935, for the after-care and treatment of indigent persons suffering from infantile paralysis and for the purchase of necessary appliances

**Society News**—The Vermont Social Hygiene Council was recently formed, with Dr Charles F Dalton, state health officer, as president.—Dr Kenneth J Tillotson, Belmont, Mass, addressed the Burlington and Chittenden county medical societies at a joint meeting at the University of Vermont, Burlington, recently

## WASHINGTON

**Society News**—Dr Hermon C Bumpus, Jr, Rochester, Minn, addressed the King County Medical Society, Seattle, January 23, on transurethral prostatic resection—Dr Robert C Coffey, Portland, Ore, addressed the Walla Walla Valley Medical Society in Walla Walla, January 12, on abdominal surgery

**Bills Introduced**—H 92 proposes to levy on every practitioner of the healing art an annual tax equal to 0.5 per cent of the sum obtained by subtracting \$3,000 from his gross professional income. If the gross professional income exceeds \$3,000, the minimum tax to be imposed is \$10. H 110 requires all applicants for licenses to marry to submit certificates from reputable physicians showing that the applicants are free from all venereal diseases as of a date not more than ten days prior to the application. It is to be a gross misdemeanor for any physician to certify falsely as to the condition of either or both of the applicants. S 60 proposes to create a board of sanopractic examiners and to regulate the practice of sanopractic. Apparently applicants for licenses to practice sanopractic, whether by examination or by reciprocity, are not to be required to stand examination by the examining committee in the basic sciences, as is required of all other applicants for licenses to practice the healing art. Sanopractic licentiates are to be permitted to treat disease by the sanopractic method, which apparently, would include the use of mechanical or electrical instruments or appliances, "traumatic" surgery, minor surgery, and "orificial" surgery. H 115 proposes to permit dentists and dental students to possess human dead bodies for the purpose of anatomic inquiry or instruction

## WEST VIRGINIA

**Bills Introduced**—S 29 and H 128 propose to create a board of barber and beautician examiners and to regulate the practice of barbering and beauty culture. H 99 proposes to require physicians to attend all confinement or childbirth cases for which their services are requested, regardless of the ability of the patient to pay. If a physician is unable to collect for such services the county is to pay him \$15 for each case.

## WISCONSIN

**Bill Introduced**—S 45 to amend the optometry practice act proposes to permit the revocation of the license of any licentiate who uses the title "Doctor" or "Dr" as a prefix to his name without the word "optometrist"

## WYOMING

**Bill Introduced**—H 71 proposes that every person securing a marriage license must produce a certificate dated within ten days before the date of the application for such marriage license from a licensed physician showing applicant to be free from any venereal disease in a communicable stage

## GENERAL

**Advisory Board on Cancer Problems**—The American Society for the Control of Cancer recently announced through its executive committee that the board of directors of the society would serve as a consulting board to advise on any problems of cancer research or treatment that may be submitted to it by individuals or institutions. The board is composed of fifty physicians, surgeons, chemists, biologists, statisticians and financiers

**Yellow Fever Volunteer Dies**—The death of Paul Hamann, East Moline, Ill, one of the volunteers in the famous yellow fever experiment in Cuba in 1900-1902 has been reported. He died of bronchopneumonia following influenza after an illness of one week. Hamann was one of the fifteen living volunteers who received gold medals and pensions of \$125 per month authorized by Congress in 1929. The medals were presented in 1931 (THE JOURNAL, Dec 5, 1931, p 1718)

**University Limits Foreign Students**—The New York Times reports that the University of Cologne, Germany, has recently decreed that qualifications of all foreign applicants for admission are henceforth to be examined more carefully in order not to crowd out better prepared German students. The Prussian ministry of education has also ordered that all applications of foreign students be submitted to it for approval. As a result of this stricter control, it was said, only fifteen out of sixty American students who recently applied for admittance actually arrived

**Society News**—Dr Frederick C Cordes, San Francisco, has been appointed secretary of the Pacific Coast Oto-Ophthalmological Society, succeeding the late Dr J Frank Friesen.—The American Child Health Association has abolished its publication division and reduced the staff of its medical division as a result of reduced income, it was announced, January 1. The divisions of research and education will continue their work, it was said.—The thirtieth annual meeting of the American Urological Association will be held in Chicago, June 20-22.—Dr Charles R Stockard, professor of anatomy, Cornell University Medical School New York was elected chairman, and Dr Walter M Simpson Dayton, Ohio secretary, of Section N (Medical Science) of the American Association for the Advancement of Science at the recent annual meeting

**Medical Bills in Congress**—*Changes in Status* S 100 has been favorably reported to the House, proposing to amend the laws of the District of Columbia by authorizing degree-conferring institutions heretofore incorporated under such laws, but operating exclusively in foreign countries to use the words "American" "Federal," etc, in their titles. The law thus amended is aimed at so-called universities that issue to correspondence students degrees in medicine, dentistry and other studies. The institutions heretofore incorporated are believed to be free from offense in this regard. H R 14199, the War Department Appropriation bill has passed the House. Efforts on the part of Representative Barbour California, and of Representative Beedy, Maine, to amend the bill to restore to the medical dental and veterinary corps units the privilege of participating in the appropriation for the Reserve Officers' Training Corps, and to permit the enrolment of students in these units were fruitless. *Bill Introduced* H R 14395, introduced by Representative Celler New York, relates to the prescribing of medicinal liquor. It proposes to remove the statutory limitations with respect to quantity and with respect to frequency of prescription, and provides that, "subject to regulations" no more liquor shall be prescribed to any person than is necessary to supply his medicinal needs. It proposes, further, to discontinue the use of the existing prescription forms and to authorize the issuance of stamps in lieu thereof, to be affixed by physicians on every prescription issued for medicinal liquor

## Deaths in Other Countries

**Georges Haret**, head of the radiologic service at La Ribouisiere Hospital Paris author of textbooks on radiology aged 58 as the result of radium burns following a series of operations and amputations.—**Sir Robert Jones**, lecturer in orthopedic surgery University of Liverpool, emeritus president, British Orthopedic Association author of textbooks on surgery at Llanfechain, Wales, aged 74

## CORRECTION

**Exophthalmic Goiter in Boston and Chicago**—In the legend of chart 6 in the article by Thompson and Means in THE JOURNAL Oct 29 1932 p 1487, 90 minims of compound solution of iodine was computed as containing 7.56 mg of iodine whereas the latter figure should have been 756 mg of iodine

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Jan 7, 1933

#### Massive Radiotherapy The Radium Bomb Rehabilitated

As stated in previous letters, the Radium Commission withdrew the 4-Gm radium bomb that was used at the Westminster Hospital for massive irradiation and subdivided it into four units for distribution. This decision was made because the results were not satisfactory, but it aroused much criticism, as massive irradiation was going on in other countries. A conference of leading physicians and surgeons, including the presidents of the Colleges of Physicians and Surgeons (Lord Dawson and Lord Moynihan) then considered the question. In a report issued in March, 1932, they concluded that the decision of the Radium Commission was sound, "though without prejudice to the question of the therapeutic value of the 4-Gm or even larger aggregations of radium." They also reported that a fully equipped radium institute is needed in London, where the more difficult and speculative problems connected with radium and roentgen therapy can be studied.

The conference appointed an expert committee consisting not only of radiologists but also of two eminent physicists—Lord Rayleigh, F.R.S., and Prof J. C. McLennan, F.R.S.—with the following reference: (a) What is the scientific case for mass irradiation, and what are the advantages and dangers attaching to it? (b) What are the advantages and risks of massive surface irradiation by radium compared with those of radium needles and radon seeds? The committee has issued a report, which is possibly the most authoritative pronouncement on radiotherapy in this country. The use of radium in malignant disease, it is stated, depends on the empirical observation that in a large number of instances the cells of malignant tumors are destroyed by an amount of radiation insufficient to destroy normal tissue. This proposition is generally true over a large range of wavelengths and certainly extends from  $\alpha$  rays with a wavelength of 1 angstrom unit to hard gamma rays with a wavelength of 0.04 angstrom unit or less. In spite of an immense amount of research, it is still uncertain whether there is any specific difference between the longer and the shorter waves in their effects on the cells, although there is a general impression that short waves have a higher degree of selection for the cells of malignant tumors in virtue of their rapid growth. What is however certain is that short waves have a higher penetrating power and therefore are capable of conveying energy into the deeper tissues, while longer waves are absorbed in the more superficial tissues and there expend a large share of their energy. Hence x-ray apparatus is being made to generate shorter and shorter waves, but no apparatus has yet been made to generate waves as short as the gamma rays of radium. These short wave generators are still on trial and it is important to be able to compare their effects with those of mass irradiation by radium.

The margin between general destruction of the tissues and selective destruction of the malignant cells is very small and it is therefore essential that every element of tissue throughout the region treated should receive exactly the same amount of radiation for if at any point there is a less amount some malignant cell will survive while if at any point there is an excess the supporting tissues will be destroyed. Success in treatment depends on obtaining a uniform field of radiation and has always been proportional to the accuracy with which this physical problem has been solved and there are strong grounds for believing that on its more complete solution may depend the whole future of radium therapy in cancer. Throughout the

field the scalar value of the energy absorbed must be constant both in the cross section and in the depth of the field. For this purpose gamma rays present a definite advantage over x-rays, since, owing to their shorter wavelength they have a greater penetration. In both cases the intensity of the field diminishes with distance from the source, but the gamma rays are much less affected by tissue absorption and therefore it is easier to maintain a uniform field as depth increases. It is true that the great volume of power available in the modern x-ray tube allows of a greater working distance, so that the energy delivered in the depth of the body may be greater than that obtained from radium. But the use of such a volume of energy has the disadvantage that it produces more constitutional disturbance than gamma rays of equal adequacy, possibly owing to more complete absorption by the tissues. The relative value of the two methods can be discovered only by further experience.

#### MASSIVE IRRADIATION WITH RADIUM

Massive units of radium outside the body are a powerful means of subjecting a region of considerable volume to uniform irradiation by gamma rays, and, if sufficient radium were available, would be the most perfect physical solution of the problem. A single beam is not sufficient, since the fall in intensity at a distance necessitates excessive irradiation of the proximal tissues. This may be overcome by multiple ports of entry, and by calculation an almost uniform field can be obtained throughout any volume of tissue. In spite of variety of methods, it is still only in special instances that the radiotherapy of cancer is successful, and there remain whole regions where it has not been seriously attempted, such as deep-seated tumors in the chest and the abdomen. Here massive irradiation with its penetrating rays appears at first sight to be the solution. But difficulties that are not physical but are inherent in the disease arise. However, there are grounds for hoping that by some combination of surgery and irradiation even cancer of the alimentary tract may ultimately be brought under control. Such cautious observers as Forsell and Regaud hold that irradiation from a distance, either by massive radium units or by  $\alpha$ -rays at a potential not yet obtained, will play an essential part.

#### SAFETY OF PATIENTS

The methods described may be employed by experts without danger to themselves or to patients, but the use of radium in any form by the inexpert is dangerous. Massive dosage is not necessarily associated with any particular danger to the patient. The severe constitutional disturbance observed in some instances has been due to some error of technic. Massive irradiation with radium (telerradium) has proved valuable, though in a limited field.

After full consideration, the committee is convinced that a large radium unit should be erected in this country under conditions of coordinated clinical, experimental and physical research and should contain not less than 5 Gm of radium element. The conference has adopted the view of the committee. It may be added that a 15-Gm unit is likely to be established in Brussels on the advice of an international committee.

#### Peerage for Sir Thomas Horder

Sir Thomas Horder, Bart, physician to St Bartholomew's Hospital has been made a peer. There are now three peers in the medical profession, the other two being Lord Moynihan and Lord Dawson of Penn. It is only in comparatively recent times that peerages have been conferred for medical eminence. The first was conferred on Lord Lister, the founder of antiseptic surgery. Sir Thomas Horder is physician to the Prince of Wales and to the prime minister, Mr Macdonald. He first made a reputation as a clinical pathologist at a time when clinical pathology was in its infancy. In conjunction with the late Sir Frederick Andrewes, pathologist to St. Bartholo-

new s Hospital, he did important work on the streptococci. He then became a leading clinician. In this age of specialism, with its attendant fads, he can be relied on to give a balanced authoritative opinion. He has a great reputation as a diagnostician and is an excellent clinical teacher. He is also a social worker and a prominent supporter of the birth control movement.

### The Irish Hospitals and Sweepstakes

The success of the Irish hospitals in financing themselves by taking advantage of the gambling spirit of the world is so great that, since the special act passed by the dail in 1930, claims by forty-eight hospitals for aid amounting to \$47,000,000 have been made and \$32,000,000 has been awarded. Receipts from previous sweepstakes funds amount to \$8,800,000. It is stated that \$14,300,000 was awarded for endowment purposes, \$15,700,000 for building works, site, mechanical plant and fees, \$1,320,000 for repayment of loans and \$760,000 for medical, surgical and pathologic apparatus. It is announced that more hospitals will participate in subsequent sweepstakes. The claims are much in excess of the awards, some of which are considered insufficient, and in some cases amended claims are being prepared. Seven sweepstakes have been arranged to take place before July, 1934, when the special act expires.

### PARIS

(From Our Regular Correspondent)

Dec 21, 1932

### Relation of Dementia Praecox to Tuberculosis

The Societe medico-physiologique recently devoted a session to the consideration of a question on which the opinions of neurologists differ. It has been observed that in a large number of cases of dementia praecox one finds unmistakable evidence of tuberculosis. Possibly it is premature to conclude at once that dementia praecox is a cerebral type of tuberculosis. F. d'Hollandser and Rowroy injected into forty-seven guinea-pigs the cerebrospinal fluid of twelve patients affected with dementia praecox, and forty-three of the pigs developed lesions of experimental tuberculosis, susceptible of serial inoculation into other guinea-pigs. But the tuberculosis that is produced is benign, showing a spontaneous tendency to sclerosis. In four of these twelve patients, acid-resistant bacilli were found. Of thirty samples of blood, cultures revealed in ten instances the presence of tubercle bacilli. Researches showed the presence of a virus of tuberculosis in the cerebrospinal fluid in certain cases of dementia praecox (eleven positive cases in twelve patients) and also in the brain. The authors conclude that tuberculosis plays an important part in the etiology of dementia praecox. H. Baruk, Bidermann and Albane made the same observations on guinea-pigs, some of which had been previously rendered allergic. Only the latter presented disorders, either in the form of an immediate local ulceration or in the form of nervous disturbances, at the end of from three to nine weeks, together with paraplegia, epilepsy and death in convulsions. When the experiment was repeated with the cerebrospinal fluid of persons affected with tuberculous pleurisy but free from dementia praecox, the results were negative. Later, Toulouse, P. Schiff, Valtis and Van Demse searched for the tuberculous ultravirus in the cerebrospinal fluid of patients presenting the syndrome of dementia praecox in order to eliminate the cases in which tuberculosis might have arisen during the sojourn in the psychopathic hospital. Three patients who developed later a characteristic dementia praecox gave no signs of tuberculosis. The avirulent bacilli of Calmette-Valtis, the discoverers of the ultravirus, were found only in a patient who had had a curable attack of delirium and in a patient who presented a schizophrenic state. In this case the spinal fluid taken during an interval between attacks contained only the ultravirus. When taken during the attacks it revealed in addition to the

ultravirus, a few bacilli. Louis Coudere in a comprehensive report reached the conclusion that dementia praecox is usually only the mental sign of meningo-encephalitis due to a neurotropic ultravirus of a tuberculous nature. In 60 per cent of patients with dementia praecox, he found the general habitus characteristic of tuberculous patients. In the 60 per cent, slight signs of tuberculous infection were mingled with neurologic signs. The inoculation of the cerebrospinal fluid of these patients into guinea-pigs sensitized by a minimal dose of ultravirus produces reactions.

### Annual Report on Smallpox Vaccination

Addressing the Academy of Medicine, Mr. Camus presented recently his annual report on the vaccinations and revaccinations performed in France, Algeria and the French protectorates during 1931 and in the French colonies during 1930. Camus took account of both private and public vaccinations. The total number of primary vaccinations in 1931 was greater by 20,652 than that of 1930. A diminution in the primary vaccinations was reported in only thirty-five departments of France, and there was an increase for 1931 of 122,650 over the preceding year. The revaccinations reached a high figure in all except six departments. The presence of smallpox was reported by the departmental authorities in only three departments: Indre-et-Loire (three cases, two of which were fatal), Herault (two cases, no deaths), and Bouches-du-Rhone (two cases, no deaths). In the colonies, in 1930, more than 13,000 cases of smallpox were observed. The preceding year, there were only 7,478 cases. A large number of vaccinations were performed (8,451,829 for a population of 47,072,750). In Morocco, for the year 1931, 727 cases of smallpox were reported (the average of recent years was only 300 cases). There were only twelve cases among the European and four cases among the French population. The vaccinations were therefore intensified, and the epidemic rapidly subsided. In Tunisia, which has 2,410,692 inhabitants, including 195,293 Europeans, smallpox is diminishing year by year. There were only nineteen cases in 1931, with four deaths. Only the systematic and persistent application of vaccination, together with all forms of civil control, made it possible to achieve this excellent result. During the year 1931, 611,919 vaccinations were performed in Tunisia.

### A Bill Providing for a Council on Medical Ethics

For many years, the physicians of France have been demanding the creation of an official council on medical ethics, patterned after that which exists for the lawyers and possessing the same privilege of judging alleged violations of professional honor, independently of the delicts that come under the jurisdiction of the ordinary courts. The Confederation des syndicats medicaux had assumed in part this role but its decisions had no legal weight. But physicians are not all favorable to the idea, there are many who fear that such a tribunal may not always be impartial and that sometimes it may render decisions inspired by professional jealousy. The Academy of Medicine, when consulted on the subject a few years ago, gave an unfavorable opinion and proposed in preference a return to the ancient oath of Hippocrates, in connection with the conferring of the doctor's degree and the creation of a course of instruction in professional deontology at the faculties of medicine. The question slumbered on until suddenly, Dec. 8, 1932, at a morning session of the chamber of deputies a bill providing for the creation of a council on medical ethics presented by Deputy Xavier Vallat, was voted on and passed without examination or discussion along with numerous other bills of secondary importance being simply read to the assembly and voted on at once by show of hands while the attention of parliament was centered on the discussion of the grave question of the debts owed to the United States. This decision which is so important for the medical profession, resulted therefore,



from a surprise vote. However, the bill will not become a law until it has been approved by the senate, which, no doubt, will examine it more closely. Its essential stipulations, which as yet are not definitive, provide for the compulsory enrolment of every practicing physician in a chapter to be created in each department. Each chapter would elect a council composed of from six to twenty-four members, depending on the number of voters, and this council would select a president and a committee on discipline. Every professional misdemeanor would be judged by this council and the following penalties are provided for: (1) warning, (2) reprimand, (3) suspension of practice for a period not to exceed one year, and (4) removal of the offender's name from the roster of the council and definitive revocation of his license to practice medicine. There is established also a tribunal of appeal, which consists of two magistrates, one of whom is the president of the council. The decisions of the council are transmitted officially to the prefect of the department in question, whose duty it is to enforce the penalty of suspension or of removal from the register of physicians.

### BERLIN

(From Our Regular Correspondent)

Dec 19, 1932

#### Predisposition to Colds

P. Schmidt, hygienist of Halle, undertook recently a series of experiments on the origin of ordinary colds in man. His main object was to discover what persons have a special predisposition for colds. He found that colds occur most commonly in persons whose heat regulatory system easily breaks down. When such a person is chilled for some time, there is brought about, through the action of the cold, exactly as in a normal person up to this point, a contraction of the blood vessels of the skin and also of the mucous membranes of the respiratory organs. This vascular contraction of the mucosae soon retrogresses, however, in a healthy person, whereas in the person who is predisposed to colds it continues much longer. Owing to this contraction of the mucous membranes, the defense forces can no longer be adequately mobilized, and as a result of the disturbance in the irrigation of the tissues they become impaired and the ever present bacteria find a favorable field for their development. Schmidt's researches showed that only about 10 per cent of persons have a predisposition to colds, whereas most persons, soon after an intense cooling of the body, regain a normal temperature of the mucosae. In the experimental subjects who showed a pronounced tendency to colds, the restoration of normal body temperature was delayed and in some cases was not completed within the time of the experiment which was one hour. But in addition to the congenital or required predisposition to a persistent vascular contraction, following the cooling of the body, there is another presupposition necessary for the development of a cold or catarrhal manifestation, namely, the chronic infection of the mucous membrane with bacteria such as pneumococci, streptococci and influenza bacilli. There is a big difference whether the mucous membranes harbor only a few degenerated micro organisms or large numbers of virile germs. In the latter case the predisposition to inflammatory catarrhal manifestations is much greater if the protecting epithelium is damaged in which event the defense apparatus is impaired. The bacteria can penetrate more deeply the mucous membranes whereby the predisposition to colds becomes greater. This predisposition may be greatly enhanced by inordinate speaking, dust, corrosive gases, and the like. Indeed such factors may produce the predisposition in persons who are not generally inclined to colds. The predisposition to colds may be accentuated also by nervous exhaustion and by psychic influence. The normal person will have a tendency to cold in special conditions, deprive him of his proper heat result in a draft or unperceived current of air constitutes an

added cause. In the etiology of a cold, therefore, many separate and distinct factors play a part. Without doubt, a person can lessen his predisposition to colds by frequent long periods spent in the open air, but in some cases even that is of no avail.

#### Splitting the Atom and Treating Cancer

Among the new methods of attacking cancer, a procedure much talked of is associated with attempts at breaking up the atom by high-powered bombardment. While the breaking up of the atom is exceedingly important for the physicist, its use in therapeutics appears, for the present, doubtful, as Professor Holthusen emphasizes in the *Deutsche medizinische Wochenschrift*. It must not be overlooked that there are fundamental differences between splitting the atom, on the one hand, and the action of the rays on the cells. In the action of the rays on cancer cells there is some resemblance to the breaking up of the atom, since the rays serve to loosen the structure of the cellular molecules and thus to bring about their destruction. The decisive difference, however, lies in the amounts of energy required. Whereas these amounts must be extremely heavy in order to overcome the electrical forces in the atomic nucleus, the adhesive forces that bind together the components of the molecules of the cells are much less significant. In the roentgen and gamma rays that heretofore were used in treating cancer, the energies that are freed are sufficient to cause reactions which destroy the cells. From an increase of the total energy such as is attained by using the strongest electrical tensions, up to 1,000 kilovolts or more, no fundamental increase in the curative value can be expected. Holthusen writes: "The problem of combating cancer with radiating energy lies in the proper distribution of doses over a longer period of time. The important question is to ascertain for each carcinoma the best distribution of the doses over a period of time. Progress has been made in adapting the duration of the irradiation and of the intervals between doses to the rhythm of events taking place in the diseased tissue."

#### Visit of Russian Physicians

A group of Russian scientists headed by Vladimírski, director of the public health service in Russia, spent the period from Nov 28 to Dec 2, 1932, in Berlin. Before various scientific societies, the visitors delivered addresses on their specialties and on the organization of medical institutions in soviet Russia. Abrikosov, pathologic anatomist of Moscow, addressed the Society of Internal Medicine, Pletnev, internist of Moscow, and Burdenko, surgeon of Moscow, the Berlin Medical Society. At a specially organized meeting of the federal health bureau, Holtzmann, director of the government tuberculosis institute in Moscow, and Batkis, social hygienist of Moscow, delivered addresses. Finally, the Berlin Physiologic Society was addressed by Bogomoletz, president of the Academy of Sciences of the Ukraine, the chemist Zbarsky of Moscow, and Paladin, director of the biochemical institute in Kharkov. During the visit the more important Berlin hospitals and scientific institutes were inspected. The visit ended with an excursion to Munich.

#### Poliomyelitis in Relation to Quackery

The Prussian Ministry of Public Welfare has notified the authorities in the provinces that the outbreak of poliomyelitis has been the occasion for increased activity on the part of charlatans, who have been recommending, as measures for combating the disease, radium preparations, irradiating apparatus, and certain oils or liniments. Such methods of treatment are worthless, of course, and may at times be dangerous. The provincial authorities are urged to enlighten the public concerning the danger of the recommendations of quacks in connection with infantile paralysis and to combat by every possible means the depredations of charlatans in this field of medicine.



## ITALY

(From Our Regular Correspondent)

Nov 30, 1932

## Congress of Internal Medicine

The thirty-seventh Congresso nazionale di medicina interna was held in Rome under the chairmanship of Prof. Edoardo Maragliano

## ARTERIAL HYPERTENSION

Professor Greppi of Milan discussed "Arterial Hypertension as an Independent Distinction and Disease," bringing out particularly in his paper the difference between hypertensive excitability and the hypertensive state. The primary factor that sustains the arterial pressure and maintains it at a normal level in the adult is the tonus of the sympathetic nervous system, which is accomplished through the stimulating influence of the chemical composition of the blood (carbon dioxide) on the vasoconstrictive centers, and thus in turn, determines the tonus of the parasympathetic system, which exerts a hypotensive influence. The clinical aspects of hypertension are many. Young persons with hypertension show usually an increase in the glycemie index and fluctuations in the blood sugar level from one moment to the next. Lecithinemia tends also to be prominent in hypertension, but to a less extent than cholesterolemia and at a later period. According to the speaker, essential hypertension is a syndrome and not a disease, and a familial morbid imprint has a great influence on its occurrence. Among the factors to be considered primarily are the emotions and certain endocrine influences.

The general discussion on this topic was opened by Professor Pende of Genoa, who brought out that it cannot be affirmed with certainty that persons with hypertension are those in whom the sympathetic nervous system is dominant. According to modern views pituitary extract constitutes the true hormone of the capillaries, whereas epinephrine is important only in an emergency.

Frugoni of Rome discussed the relation between paroxysmal hemocrania and hypertension. In explanation of the relation between the hypophysis and hypertension, he described a case in which, after sixteen years of severe hypertension, radiography revealed an abnormally deep sella turcica.

Aresa of Cagliari, basing his opinions on a study of 194 cases, pointed out the difficulty of classifying the various types of hypertension. Hypertension does not present a constant constitutional type or uniform endocrine manifestations.

Baglioni, physiologist of Rome, pointed out the difficulty of determining what are the etiologic factors in hypertension. Arterial pressure may be regarded as the resultant of the condition of the heart and the peripheral vessels but should not be regarded as a function in itself.

## AMEBIASIS

In the absence of Professor Izar of Messina, who was injured in an automobile accident, Prof. M. Ascoli of Palermo presented the paper on the second topic, "Amebiasis." The only pathogenic ameba that is well known is *Endamoeba histolytica* of which the other varieties (*nana minuta*, *dispar* and others) are only atypical forms. A pathogenicity of the other amebas is rare. Amebiasis may be regarded as a disease that is prevalent in all countries. In Italy it is endemic with a wider diffusion in the islands and in southern Italy.

In the subchronic condition which is peculiar to Italy there are observed acute exacerbations during the summer and outbreaks connected with a transient increase in the pathogenicity of the parasite as a result of dietetic errors. *Endamoeba histolytica* is always pathogenic for man. The port of entry of the parasite is usually the mouth. Convalescents are rightly suspected of being carriers also animals that come in contact with man. The disease amebiasis evolves slowly with many

exacerbations and remissions and long intervals of deceptive quiescence that might lead one to assume that the patient had recovered, whereas they are only periods of latency of the parasite. The diagnosis is based chiefly on the history and on the careful examination of the feces. The liver is the most frequent site of the secondary process, but pulmonary localizations are not as rare as was supposed. The speaker does not admit that there is such a thing as a gallbladder lesion independent of an hepatic lesion. The treatment of intestinal amebiasis is confined to emetine, combined with arsenical preparations. It should be used early and repeated periodically.

In the general discussion, Professor Boeri of the University of Naples called attention to the danger of confusing non-pathogenic with pathogenic forms of ameba. In doubtful cases it is advisable to resort to a test course of treatment. In addition to dysentery, amebiasis may produce paraintestinal inflammation. It should be noted that the use of emetine is not without danger.

Professor Pontano of Rome does not believe that there are ameba carriers who are perfectly well. Even though examination of the feces does not reveal the parasites, a roentgenogram would often show a spastic colitis.

Pulle of Bologna claimed for the Clinica medica of Bologna the merit of having first called attention to the importance of amebiasis in Italy.

## CHRONIC HEPATITIS

The third topic, "Chronic Hepatitis," was presented jointly with the Società di chirurgia, which held its annual congress simultaneously. Prof. L. D'Amato of the University of Naples said that the term "chronic hepatitis" is reserved by the anatomists and pathologists for the diffuse chronic inflammatory processes of the liver. Not all cases of chronic hepatitis can be placed under the head of cirrhosis. The importance of alcoholism in the pathogenesis of cirrhosis is still a live topic, and the conception of dyspeptic cirrhosis has not been entirely abandoned. Syphilis and tuberculosis are regarded as possible etiologic factors. Numerous substances have been employed experimentally to produce cirrhosis in animals, but the experiments have not given satisfactory results. Authors are not agreed on the classification of the various types of cirrhosis. The speaker cited the classification of Rossle, who distinguishes an atrophic form and a hypertrophic form of Morgagni-Laennec cirrhosis. The hypertrophic forms are then subdivided into the following classes: Laennec type, fatty, biliary, hematotoxic and angiotoxic. The types described by Eppinger are essentially three: the splenomegalic type without ascites or icterus, the splenomegalic type with permanent icterus, and the type accompanied by grave anemia. The author explained then the behavior of the spleen in hepatic cirrhosis, stating that splenomegalia is present in from 70 to 90 per cent of the cases. A clinical classification of cirrhosis of the liver is still open to objection. In conclusion, the speaker described the treatment of the forms of hepatitis and cirrhosis, emphasizing the dextrose-insulin treatment and the application of diathermy. He admitted that the treatment often fails to give good results.

The Società di medicina interna decided to hold the next congress at Pavia.

## Congress on Nipiology

The third Congresso nazionale di nipiologia was held in Perugia, under the chairmanship of Professor Caccace. The present laws in Italy make it necessary to provide and for illegitimate children recognized by the mother. Statistics collected for the four-year period 1925-1929 showed that among children receiving aid the mortality ranges around 10 per cent, whereas the mortality of children of unknown parents is about 29 per cent.

Professor Alinari pediatrician of Turin presented a paper on the hospitalization of nurslings. It is known that the admission of nurslings to hospitals sometimes proves to be more

harmful than useful for the child, because of the so-called hospital marasmus, which condition is due to infection and unsuitable diet. To obviate these disadvantages, special institutes are required for healthy and sick nurslings, respectively.

Another paper, on aborted avitaminosis in the nurslings, was presented by Professor Frontali, pediatrician of Padua, who said that this condition is the result of a partial but not total deprivation of a definite vitamin factor. The absence of vitamin A gives rise to abortive types of keratomalacia. Also abortive types of avitaminosis due to the absence of vitamin B are not rare in nurslings on an artificial diet, in Italy. The vitamin factor has an influence on the exchange not only of carbohydrates but also of fats and may provoke skin changes in children. In all these conditions the vitamins, if suitably employed, are specific remedies and may give brilliant results.

Professor Pende, "medical clinician" of Genoa, read a paper on the relations between endocrinology and nipiology. According to the speaker, the first year of life has two periods that may be termed endocrine crises. There is a postnatal hormone crisis, which continues to about the sixth month, and there is a crisis that begins with the second six months of life. In the first six months there occur hypothyroidism and physiologic hypoadrenalism which explains the great intensity of metabolism, with increased assimilation and marked gain in weight in comparison with the successive years, but there is observed also a hyperfunctioning of the entire sphere of the parasympathetic system. There are also hepatic hypo activity and pancreatic hyperactivity. The second—hormone—crisis consists in an active stimulation of the functioning of the thyroid, the suprarenals, the parathyroid and the pituitary body. These conditions are associated with a physiologic hyperactivity of the liver.

#### Case of Testicular Graft Taken to Court

At Naples, Professor Iannelli performed an operation in which he made a transplant from one human being to another, using a gland taken from a strong young man who gave his consent and grafted in a young man affected with testicular atrophy. The royal prosecutor, by virtue of his office, brought criminal charges against all the physicians who participated in the operation. The defense pleaded that the intervention had a scientific and a curative intent and that to attempt to check the ardor of experimenters would be contrary to the interest and progress of science. The defense brought out also that the donor would suffer no damage, as there would probably be produced a compensatory hypertrophy of the remaining gland while the recipient secured, at least temporarily, restoration of the sexual function. The court acquitted the defendants and the decision was upheld by the court of appeals to which the royal prosecutor had appealed the case. A final appeal to the supreme court has now been taken.

#### Apparent Death in Tetanus

In addressing the Società medico chirurgica della Romagna Dr. Mondolfo of Cesena called attention to apparent death in tetanus and to the possibility of resuscitation by means of artificial respiration. A frequent cause of death in persons with tetanus is the sudden arrest of respiration due to spasm of the diaphragm and intercostal muscles. In such cases it is logical to apply artificial respiration to maintain a minimum of respiratory efficiency until normal respiration is resumed. In grave cases with contractions of prolonged duration even artificial respiration may be without effect. Dr. Mondolfo who in some cases of apparent death in tetanus patients brought about resuscitation by means of artificial respiration emphasized that this simple maneuver is not mentioned in treatises on therapy. He considered it worth while to remind general practitioners of this method as it will give good results unless

### TURKEY

(From Our Regular Correspondent)

Ankara, Dec 30, 1932

#### Interview with an Obstetrician

Prof. Dr. Besim Omer Pasha, head of the department of obstetrics at the medical school, was the first obstetrician to engage in private practice in Turkey, when interviewed recently, he said that when he began practice, almost fifty years ago, attendance at a birth in a private home often was by imperial decree. Whenever complications arose in connection with deliveries among the wives of the sultan's official family they went to the sultan, who then issued a decree. So frequent became these decrees that Abdul Hamid earned the title of head midwife. "In the middle of the night his majesty's messenger would enter my bedroom holding the imperial decree right under my nose. 'You are required to attend the delivery at the given address and make the outcome known to his majesty at once,' it generally read. Often the home I was to visit was at a distance or across the water and the sultan would impatiently inquire why I had not reached there at a given time. Now and then I would not find in the house a woman to be delivered, the sultan's generosity had been taken advantage of. At that time, the midwife generally attended confinements. She was engaged months before the event, and presents in the form of soap, clothing and coffee were given her. These were purposeful presents. The soap meant we want you to be clean, the clothing do not wear what you have worn at the confinement of somebody else, and the coffee, be wide awake when attending to your business. The old midwife was held in high esteem. At that time the physician was rarely called to attend a sick woman. He would be expected to diagnose the case by feeling the pulse over her carefully covered arm. Intervention in a case of confinement could not be undertaken without permission from the husband, who sometimes religiously refused. Once while I was attending a complicated delivery with two of my assistants, the Persian husband suddenly drew a revolver and threatened to shoot us if an accident happened. I managed to snatch the weapon and with it kept him outside the sickroom while the assistants continued their work. The most trying deliveries were those of the princesses in the palace. One never knew what might happen, in case of an accident that no human being could prevent. The often irrational sultan would rather not have a male obstetrician so he required that I supervise the delivery from a distance. In case of absolutely necessary intervention he was to be informed at once. There was often but a thread between performing one's duty and being classified as a criminal.

#### Physicians' Fees

The question of physicians' fees which is becoming more acute was discussed at the physicians' friendly society in Istanbul recently. The low fee the general practitioner or the specialist receives today is still considered too high by the public, although every physician gives much of his service to needy patients without remuneration. The younger men of the profession are at a great disadvantage in that people who are able to pay a fee invariably consult the academic professor whose service may be procured for a fee which is not much above that of a general practitioner. However, if called on in consultation by his colleagues the professor charges from 20 to 25 pounds. The question was taken to the Istanbul chamber of physicians, which proposes to divide physicians' fees into four groups: those of the general practitioner whose office is located in his home and whose practice is confined to a certain district; of the general practitioner with an office other than at his home; of the specialist; and of the academic professor. According to this plan the general practitioner whose office is located in his home is to receive 1 pound, the

equivalent of 47 cents, the general practitioner with an office other than at his home 2 pounds, the specialist 3 pounds, and the academic professor from 4 to 5 pounds. The younger men maintain that this would not entirely remedy the situation, because in many cases in which the nature of the disease would not require the service of a professor he would be charging from 5 to 10 pounds merely for an examination. The fixing of physicians' fees has long been considered by the ministry of health and social assistance, in whose hands the final decision of the matter now rests.

## RIO DE JANEIRO

(From Our Regular Correspondent)

Dec 15, 1932

### Prolapse of the Anorectal Mucosa in Children

Prof Durval Gama of the Surgical and Orthopedic Clinic of the Faculty of Medicine of Bahia, who has attended many children suffering from prolapse of the rectum, states that in the beginning only the mucosa is prolapsed and not the intestine as a whole. The prolapse is caused by aplasia, agenesis of the sphincter or simple atonia, followed by inveterate constipation or a constriction, after which the anorectal prolapse appears. This happens generally in children in poor health, undernourished, badly developed and living under bad hygienic conditions. Medical and hygienic measures rarely produce a cure. These should be used, however, in order to improve the general condition. If these measures fail, if complications arise (rectitis, ulceration of the mucosa, gangrene, infection, fever and so on) it is necessary to initiate surgical treatment. Professor Gama reviews the old procedures: ignipuncture affecting the thickness of the mucosa on a width of 4 or 5 cm, beginning at the cutaneomucosal limit, alcohol injections under the rectal mucosa recommended by Professor Roux, resection of the prolapsed mucosa, injections of liquid petrolatum in the pararectal cellular tissue, rectococcyxevia, colopexia, cerclage, anoplastica, and the operation of Heald. Professor Gama prefers the modified operation of Heald. He gives a laxative on the previous evening, enteroclysis with tepid water two hours before operation, ether or chloroform anesthesia in the dorsal position, irrigation with a 4 per cent solution of boric acid, the anal speculum then being replaced by a valve in order to support the anterior wall of the rectum, introduction of the left index finger in order to locate the point close to the sacrococcygeal angle and to guide a curved needle of Reverdin, armed with a number 3 silk suture, so that it pierces the posterior wall of the rectum and issues on the posterior surface of the coccyx, the same procedure being followed on the opposite side. These sutures are placed 1 cm from each other in order to fix the mucosa on the deeper layers. The sutures are taken out fifteen or twenty days later, and consolidation is produced by the formation of scar tissue between the mucosa and the submucosa.

### Anophelism Without Malaria

Dr Abel Vargas of São Paulo has published an interesting work on anophelism without malaria. It is well known that, although there is no malaria without anopheles mosquitoes, it is possible for these mosquitoes to exist in large numbers in certain regions that, however, remain free from malaria. This has been observed in Brazil in some localities near malarial foci, where sufferers from malaria and the anopheles mosquitoes are found together without giving rise to new cases. Some authors believe this can occur because of an immunity in the mosquito toward the plasmodium. But James and Roubaud have shown that the anopheles mosquitoes of a country from which malaria has long disappeared are easily infected. Contrary to what happens in the case of yellow fever, there is often no parallel between the number of carrier insects and the number of cases of malaria. The author gives as an example a locality in the state of Rio in which the splenic index is 25 per cent and yet anopheles mosquitoes are very rare. An electrical company proceeded to

construct a dam in a region where the author found anopheles mosquitoes (*A. argyrotarsus* and *A. tarsimaculatus*). Although all the workmen were gamete carriers, the region remained free from malaria. Other examples could be mentioned. The author thinks that the only possible explanation is that in malarial regions the anopheles mosquitoes are domestic and remain in the houses instead of leaving them after they have fed. This agrees with facts observed in Holland by Swellengrebel concerning dissociation between the functions of reproduction and nutrition in the mosquito.

### Madelung's Disease

The work of Prof Barboza Vianna on the subject of Madelung's disease has been recognized by the National Academy of Medicine. He reported the observation of a girl, aged 13, who, at the age of 11, had deformed wrists and suffered from pain that disappeared on rest. The result of a complete physical examination was negative. The Wassermann and Meimcke tests were negative. Roentgenograms revealed all the common signs of cubital dislocation, bad orientation of the carpal surface of the radius and especially marked curvature of the radius, in other words, "radius curvus of Destot." This indicated operation. A transverse osteotomy of the radius 6 cm above the styloid process was performed on the left side. A plaster-of-paris cast immobilized the member for one month and the result was perfect. Roentgenograms later showed that the secondary carpal and metacarpal dislocations and even a line reminding one of detachment of the radial epiphysis had disappeared. Professor Vianna attributes the radial curvature to general influences difficult to determine but especially to a condition of decalcification.

### Pyelitis of Pregnancy

Dr Pereira de Athayde, in a recently published work, states that pyelitis, or, better, pyelonephritis, is a serious complication of pregnancy. Its symptoms may at times be confused with appendicitis, cholecystitis, typhoid, and so on. Fortunately, the diagnosis has been made easier through catheterization of the ureter, through the use of dyes and especially through roentgenography. The causes have been known since the time of Cruveilhier: the part played by compression of the ureter by the uterus at the level of the innominate line, by the individual constitution and by a predisposition produced by pregnancy. It is necessary to consider the influence of colon bacilli either alone or associated with streptococci, staphylococci or pneumococci, the toxins of pregnancy, and, last, the influence of the sympathetic and vagus system. It is necessary as a preventive measure to keep pregnant women regularly under observation and to make complete examinations of the urine.

### Experiments on Yellow Fever

Hindle demonstrated in 1929 that the momentary introduction of the proboscis of an infected *Stegomyia* without suction of blood was enough to infect an animal with yellow fever. Drs H de Beaurepaire Aragão and A da Costa Lima of the Oswaldo Cruz Institute crushed infected *stegomyia* mosquitoes and highly diluted the virus up to 1,000,000 and with this they succeeded in infecting *Macacus rhesus* and produced in them the typical disease. The authors found that the bite of the mosquito through a piece of flannel, which removes the risk of infection from feces, produced the infection in the monkey.

### The Blood Serum Proteins in Ancylostomiasis

Drs Gilberto C Villela and J de Castro Teixeira of the Oswaldo Cruz Institute have analyzed the blood serum of twenty persons suffering from anemia due to infection with *ancylostoma* and whose clinical history they review. The examinations showed that the total proteins of the serum are diminished but that the percentage of globulin remains unchanged or is slightly increased. The fibrinogen is generally increased and the nonprotein nitrogen is normal.

## Marriages

- CARL WESTALL AAGESON to Miss Alina Docken, both of Madison, Wis., at Nashua, Iowa, Oct 20, 1932
- FRANK V NEWCOMBER, Elwood Ind to Miss Wilma Baker of Indianapolis, at Hartford City, Dec 25, 1932
- MARSHALL E DINGMAN, Urbana, Iowa, to Miss Lucille Cue of Shellsburg, at Rock Island, Ill., recently
- THEODORE JERVEY HOPKINS to Miss Jane Calvert McDowell, both of Columbia, S C., Nov 26, 1932
- EUGENE C HYDEN, Aunier, Ky, to Miss Mary Margaret Richer of Fort Thomas, Dec 23, 1932
- CLARENCE B SCHOOLFIELD, Carbon, W Va, to Miss Mary Louise Sectist of Bucyrus, recently
- CHARLES EDWARD KITCHENS to Mrs Bess Davidson, both of Dequeen, Ark., Nov 2, 1932
- CLIFFORD G ENGLE to Miss Lucile Crum, both of Henderson, Texas, Nov 4, 1932
- HERMAN E. KULLY to Miss Ruth Ziev., both of Omaha, Neb., recently
- JOHN F RAMSAY, Seattle, to Miss Lydia Gair Bushell, recently

## Deaths

William Phillips Graves ♂ for many years professor of gynecology at Harvard University Medical School, died at his home in Boston, January 25, of pneumonia. Dr Graves was born in Massachusetts, Jan 29 1870. He graduated from Phillips Andover Academy in 1887 from Yale University in 1891 and from Harvard University Medical School with honors in 1899. Dr Graves was a prominent athlete at Yale. He served his internship at the Massachusetts General Hospital and then went abroad to study in Vienna. In 1911, he was appointed professor of gynecology at his alma mater, a position he held until the present year, when he retired and became professor emeritus. He was a member and past president of the American Gynecological Association, a member of the New England Surgical Association and the New England Roentgen Ray Society and a fellow of the American College of Surgeons. He was consulting gynecologist to the Boston Lying-in Hospital and since 1907, chief surgeon to the Free Hospital for Women at Brookline. Dr Graves was the author of many medical publications, the most widely known being his textbook on 'Gynecology,' which was translated into foreign languages. He practiced medicine in Boston for many years and just recently was made an honorary fellow of the British College of Obstetricians and Gynecologists.

Clarence Joseph McCusker ♂ Portland Ore, Rush Medical College Chicago 1903 clinical professor of obstetrics and head of the department University of Oregon Medical School formerly secretary of the Oregon Board of Medical Examiners, past president of the Oregon State Medical Society and the Portland City and County Medical Society, fellow of the American College of Surgeons on the staffs of St. Vincent's Hospital and the Juvenile Hospital for Girls, chief of the obstetrical clinic Multnomah Hospital, aged 58, died Dec 24 1932 of nephritis.

James Henry P Culpepper ♂ Norfolk, Va University of Pennsylvania School of Medicine Philadelphia 1905 past president of the Seaboard Medical Association of Virginia and North Carolina member of the Southern Surgical Association, fellow of the American College of Surgeons, formerly on the staff of the Sarah Leich Hospital, aged 50, medical director of the Norfolk Protestant Hospital where he died Dec 25 1932 following an operation for appendicitis.

Gairfree Ellison ♂ Norman Okla Rush Medical College Chicago 1903 fellow of the American College of Physicians and the Society of American Bacteriologists, professor of epidemiology and public health University of Oklahoma School of Medicine, past president and secretary of the Cleveland County Medical Society, medical director of the students infirmary at the University of Oklahoma, aged 57, died Dec 22 1932.

James J Guerin Montreal Que Canada M.R.C.S. (Lond) and F.R.C.P. (Lond) 1878 emeritus professor of

clinical medicine, University of Montreal Faculty of Medicine, at one time mayor, member of parliament and cabinet minister, served for over half a century on the staff of the Hotel Dieu, being president of the medical board of that institution, aged 76, died, Nov 10, 1932.

Clarkson Seaman Mead, Port Chester, N Y, College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, New York, 1885; member of the Medical Society of the State of New York, aged 73, died, January 5, in Greenwich, Conn., of bronchial asthma and paralysis agitans.

Paul Stafford Mitchell ♂ Iola, Kan., Hering Medical College, Chicago, 1899, College of Physicians and Surgeons, Chicago, 1900, member of the House of Delegates of the American Medical Association in 1911, past president of the Kansas Medical Society, aged 57, died, Dec. 29, 1932, of pernicious anemia.

Guy Jerome Hall, Smithfield, Ill., St. Louis College of Physicians and Surgeons, 1909, member of the Illinois State Medical Society, served during the World War, formerly mayor of Smithfield, aged 54, died, Dec 26, 1932, in the Graham Hospital, Canton, of uremia and chronic nephritis.

Ralph Deems Fox ♂ Bloomington, Ill., University of Michigan Medical School, Ann Arbor, 1903, member of the American Academy of Ophthalmology and Oto-Laryngology, on the staff of the Brokaw Hospital, Normal, aged 55, died, Dec 31, 1932, of carcinoma of the pleura.

Jacob Frederick Brendel, Murray, Neb., Lincoln Medical College of Cotner University, 1903, member of the Nebraska State Medical Association, aged 56, died, Dec. 31, 1932, in a hospital at Omaha, of pneumonia, perinephritic abscess and hypertrophy of the prostate.

Le Roy Francis Herrick ♂ Oakland, Calif. Kentucky School of Medicine, Louisville, 1893, California Eclectic Medical College, San Francisco, 1894, aged 71, medical director of the Berkeley (Calif.) General Hospital, where he died, Dec. 19 1932, of septicemia.

George Rufus Davis, Marlboro, Mass., University of Vermont College of Medicine, Burlington 1908, member of the Massachusetts Medical Society, aged 52, died, Dec 26, 1932 in a hospital at Worcester, of cardiovascular renal disease and cerebral hemorrhage.

Wie Kim Lim ♂ Detroit Detroit College of Medicine and Surgery 1921, member of the Radiological Society of North America, aged 41, on the staff of the Jefferson Clinic and Diagnostic Hospital, where he died, Dec 30, 1932, of pneumonia.

Frank J McGuire, New Haven Conn., Yale University School of Medicine New Haven 1897, member of the Connecticut State Medical Society, on the staff of the Grace Hospital Society, aged 61, died suddenly, Dec 22, 1932, of heart disease.

Daniel Francis Donoghue, Holyoke, Mass., Albany (N Y) Medical College 1880, member of the Massachusetts Medical Society, formerly member of the school board, aged 76, died, Dec 23, 1932, of arteriosclerosis and chronic nephritis.

Arnold Carpenter Moon, Williamsburg Iowa State University of Iowa College of Medicine, Iowa City, 1884, member of the Iowa State Medical Society, aged 72, died, Dec 13, 1932 in Cedar Rapids, of arteriosclerosis and nephritis.

Rolla L Thomas, Cincinnati Eclectic Medical Institute, Cincinnati 1880, dean, member of the board of trustees and formerly professor of practice of medicine at his alma mater, aged 75, died, Dec 28 1932 of cerebral hemorrhage.

Frank Leslie Ferren, Westbrook, Maine Medical School of Maine Portland, 1906, member of the Maine Medical Association, school physician and city physician of Westbrook for six years, aged 58, died, Dec. 27, 1932 of influenza.

John William Lauferweiler ♂ Almster, Ohio, Ohio State University College of Medicine Columbus, 1924, member of the county board of health, aged 31, died, Dec. 20, 1932, in St Rita's Hospital Lima of a throat infection.

Ida M Shimer Thompson, Hartford Conn Woman's Medical College of Pennsylvania Philadelphia, 1885, aged 69, died, Dec 27 1932 in West Hartford of sarcoma with metastasis to the lumbar spine and pelvic bones.

James Frank Kelley, Salem Ind Hospital College of Medicine, Louisville Ky 1893, member of the Indiana State Medical Association, for many years county coroner, aged 63, died Dec. 28 1932 of angina pectoris.

James W Dawson, Yalesville Conn Toledo Medical College, 1894, member of the Connecticut State Medical Society, aged 85, died Dec 15 1932 in the Masonic Home Hospital, Wallingford of appendicitis.

**Philip Pattison Park**, Hamilton, Ont, Canada, Victoria University Medical Department, Coburg, 1885, L F P S, Glasgow, 1886, L R C S, and L R C P, Edinburgh, Scotland, 1886, aged 75, died, Oct 16, 1932

**Charles Ford Bradway**, Abingdon, Ill, Butler University Medical Department, Indianapolis, 1882, aged 82, died, Dec 30, 1932, in St Mary's Hospital, Galesburg, of uremia, prostatic obstruction and pyonephrosis

**William Argyle Garrett**, Houston, Texas, University of Louisville (Ky) School of Medicine, 1898, member of the State Medical Association of Texas, aged 73, died, Dec 15, 1932, of heart disease

**Tower Lyon Smith**, Rockwood, Tenn, Chattanooga (Tenn) Medical College, 1895, member of the Tennessee State Medical Association, aged 56, was killed, Dec 21, 1932, in an automobile accident

**Henry Von Neida Gress**, Manchester, Pa, Jefferson Medical College of Philadelphia, 1871, member of the Medical Society of the State of Pennsylvania, aged 86, died, Dec 25, 1932, of peritonitis

**Harvey L Hayes**, Kansas City, Kan, Eclectic Medical University, Kansas City, Mo, 1906, aged 70, died, Dec 20, 1932, of burns received when his dressing robe became ignited from a gas stove

**Douglas Scott Dixon**, Tofino, B C, Canada, University of Edinburgh Faculty of Medicine, Edinburgh, Scotland, 1890, aged 69, died recently in the West Coast General Hospital, Port Alberni

**Edward Archibald Robertson**, Montreal, Que, Canada, McGill University Faculty of Medicine, Montreal, 1891, served during the World War, aged 64, died, Oct 20, 1932, of cerebral hemorrhage

**Paul Hagans Ludington**, Princeton, N J, University of Pennsylvania School of Medicine, Philadelphia, 1897, aged 60, died, Dec 19, 1932, in Tucson, Ariz, of miliary and chronic tuberculosis

**Luther R Williamson**, Campbell, Minn, College of Physicians and Surgeons, Chicago, 1888, aged 68, died, Dec 30, 1932, in St Luke's Hospital, Fergus Falls, of cerebral hemorrhage

**Armstead Lester Hayes**, Notasulga, Ala, Birmingham Medical College, 1914, member of the Medical Association of the State of Alabama, aged 44, died, Dec 14, 1932, of pneumonia

**Margaret C Officer Davis**, Nashville, Tenn, Kentucky School of Medicine, Louisville, 1903, member of the Tennessee State Medical Association, aged 60, died, Dec 28, 1932, of influenza

**Noa Dymenberg**, Minturn, Colo, St Paul (Minn) Medical College, 1886, member of the Colorado State Medical Society, aged 68, was killed, Dec 24, 1932, when struck by a train

**Richard Eugene Oden**, Kinder, La, Louisville (Ky) Medical College 1891, coroner of Allen Parish for twelve years mayor of Kinder, aged 66, died, Dec 9, 1932, of heart disease

**Harvey Caloway Johnson**, Nauvoo, Ala (licensed, Alabama, 1888), aged 75, died, Dec 19, 1932, in the Walker County Hospital, Jasper, of injuries received in a fall from a porch

**Maxwell Lauterman**, Montreal, Que, Canada, McGill University Faculty of Medicine, Montreal, 1895, member of the American Urological Association, aged 59, died, Sept 27, 1932

**Arthur James Attridge**, San Bernardino, Calif, Harvard University Medical School, Boston, 1919, aged 43, was found dead, Dec 22, 1932, of poisoning by fumes from a gas heater

**Jonathan Jefferson Jones**, Jenkintown, Pa, Missouri Medical College, St Louis, 1876, Civil War veteran, aged 85, died, Dec 19, 1932, of lung hemorrhage due to arteriosclerosis

**Thomas Jefferson Crofford, Jr**, Jackson, Miss, Memphis (Tenn) Hospital Medical College, 1906, aged 48, died, Dec 15, 1932, in the Baptist Hospital, of carcinoma of the stomach

**Andrew William McCandless**, Mount Vernon, Ky, Louisville Medical College, 1890, member of the Illinois State Medical Society, aged 64, died Dec 16, 1932, of influenza

**Charles James Patton**, Westmount, Que, Canada, Chicago Homeopathic Medical College, 1898, Rush Medical College, Chicago, 1900, aged 75, died suddenly, Oct 27, 1932

**Sydney Steiner**, New York, Cornell University Medical College, New York, 1904, on the staff of the Lebanon Hospital, aged 48, died, Dec 24, 1932, of coronary thrombosis

**Michael Ulric Valiquet**, Ottawa, Ont, Canada School of Medicine and Surgery of Montreal, Que, 1906, served during the World War, aged 51, died, Nov 21, 1932

**Elit E Treadgold**, Strathroy, Ont, Canada Fort Wayne (Ind) College of Medicine, 1883, also a druggist and a minister, aged 87, died, Dec 18, 1932, of pneumonia

**John Fulton Alexander**, Mount Aerial, Ky, Vanderbilt University School of Medicine, Nashville, Tenn, 1880, aged 77, died, Dec 20, 1932, of chronic myocarditis

**George Robert Bull**, Bloomingburg, N Y, Western Reserve University Medical Department, Cleveland, 1888, aged 73, died, Dec 22, 1932, of chronic myocarditis

**Israel Schlachetzky**, New York, Ekaterinoslav Medical Institute, Dnipropetrovsk (Ekaterinoslav), Ukraine, 1884, aged 74, died, January 12, of cerebral hemorrhage

**John Edward Harry Kelso**, Edgewood, B C, Canada, University of Edinburgh Faculty of Medicine, Edinburgh, Scotland, 1883, aged 72, died, Aug 5, 1932

**Robert Thomas Hocker**, Arlington, Ky, University of Nashville (Tenn) Medical Department, 1870, aged 86, died, Dec 20, 1932, of injuries received in a fall

**Russell A Hardaway**, East Point, Ga, Georgia College of Eclectic Medicine and Surgery, Atlanta, 1909, aged 54, died, Dec 22, 1932, of coronary thrombosis

**Robert Whitney Renwick**, Los Angeles, Missouri Medical College, St Louis, 1889, aged 64, died, Nov 2, 1932, of carcinoma of the stomach and arteriosclerosis

**Frances A Prindle Smith**, Chicago Heights, Ill, North western University Woman's Medical School, Chicago, 1882, aged 90, died, Dec 16, 1932, of senility

**Abram N Hixson**, Grand Ledge, Mich, University of Michigan Medical School, Ann Arbor, 1883, aged 79, died, Dec 21, 1932, of cerebral hemorrhage

**Charles Colby Larrabee**, Prospect Harbor, Maine, Dartmouth Medical School, Hanover, N H, 1883, aged 86, died Dec 27, 1932, of cerebral hemorrhage

**James Goldie Cranston, Jr**, Arnprior, Ont, Canada, Queen's University Faculty of Medicine, Kingston, 1895, aged 59, died suddenly, Oct 3, 1932

**John Samuel Clark**, Seattle, Northwestern University Medical School, Chicago, 1891, aged 63, died, Dec 24, 1932, of carcinoma of the larynx

**Wilfrid O Tessier**, Oklee, Minn, Minneapolis College of Physicians and Surgeons, 1887, aged 70, died, Oct 19, 1932, of tuberculosis of the hip

**Oscar Ernest Grua**, Pleasant Grove, Utah, College of Physicians and Surgeons, Chicago, 1906, aged 50, died, Dec 21, 1932, of pneumonia

**Ervin Chester Latta**, Mooresville, Ind, Indiana University School of Medicine, Indianapolis, 1926, aged 39, died, Dec 22, 1932, of pneumonia

**Grant Edwin P Freeborn**, Detroit, Kansas City (Mo) Homeopathic Medical College, 1890, aged 64, died, Dec 15, 1932, of heart disease

**Sebastian de Castro y Susara**, Manila, P I, University of St Thomas College of Medicine and Surgery, Manila, 1891, died, Oct 27, 1932

**Elliott Kiblinger**, New Orleans, Memphis (Tenn) Hospital Medical College, 1897, aged 59, died, Nov 30, 1932, of cardiorenal disease

**Louis Georges Godin**, Trois Rivières, Que, Canada, Laval University Faculty of Medicine, Quebec, 1920, aged 35, died, Oct 8, 1932

**Ellen Frances Hawkins**, Oberlin, Ohio, Cleveland University of Medicine and Surgery, 1896, aged 87, died, Dec 16, 1932, of influenza

**George J Jurss**, Milwaukee, Rush Medical College, Chicago, 1885, aged 70, died, Dec 18, 1932, of arteriosclerosis and thrombosis

**John Shultis**, Port Colborne, Ont, Canada, Trinity Medical College, Toronto, 1897, aged 65, died, Oct 3, 1932, of heart disease

**Joseph Albert Mathieu**, Saskatoon, Sask, School of Medicine and Surgery of Montreal, Que, 1905, aged 52, died recently

**Ransom Herbert Green**, Woodstock, Ont, Canada University of Toronto Faculty of Medicine, 1892, died Sept 4, 1932

**George Sherk**, Cheapside, Ont, Canada, McGill University Faculty of Medicine, Montreal, Que, 1865, died recently

## Correspondence

### METHYLENE BLUE AS ANTIDOTE FOR CYANIDE POISONING

*To the Editor*—In the correspondence about "Methylene Blue as Antidote for Cyanide and Carbon Monoxide Poisoning" (*THE JOURNAL*, January 7, p 59), my knowledge of the possible usefulness of methylene blue in the treatment of cyanide poisoning and my service to the San Francisco Department of Public Health have been referred to.

The use of methylene blue (methylthionine chloride, U S P) in the treatment of cyanide poisoning is not original with Mrs Brooks. The antidotal action of this dye in cyanide poisoning was first demonstrated by Sahlm of Lund in 1926 (*Skandinav Arch f Physiol* 47 284, 1926) and significantly established by Eddy of the University of Michigan in 1930 (*J Pharmacol & Exper Therap* 39 271, 1930). Eddy states that "it [methylene blue] stimulated respiration when that was depressed by sodium cyanide to the point of enabling an animal to survive an otherwise fatal dose of cyanide." In his final paper (*J Pharmacol & Exper Therap* 41 449 [April] 1931), Eddy states that "the effects of such a dose [fatal intravenous] of cyanide were reduced greatly and the animal survived if methylene blue, 10 mgm per kilo, was injected into the femoral vein 10 minutes before, or not more than 2 minutes after, the cyanide." This action was confirmed in our laboratory immediately following Eddy's report in 1930. Since then we have been demonstrating to medical students in a course on experimental pharmacology the protective action of the dye against surely fatal doses of sodium cyanide in pigeons. Following each demonstration, questions on the possible usefulness of the dye in clinical cases of poisoning have been asked by our students and colleagues and the reply has been that it could be tried without thoughts of originality or priority claims on our part. However, I know of no one besides Dr J C Geiger who has actually made the clinical trial which he did in accordance with directions in an outline for treatment of poisoning cases prepared by me for his use. The case of cyanide poisoning in which Dr Geiger tried methylene blue was reported in *THE JOURNAL* Dec 3 1932 page 1944 and he drew attention to previously published work on the effects of methylene blue on cyanide poisoning.

I was not present at the meeting of the Society for Experimental Biology and Medicine held April 23 1932, in Berkeley and I so informed Mrs Brooks a few weeks ago. I missed that meeting on account of being in the East attending meetings of the Council on Dental Therapeutics in Chicago and of the Federation of American Societies for Experimental Biology in Philadelphia. Dr M L Tainter associate professor of pharmacology in my department discussed the paper of Mrs Brooks at that meeting and he mentioned the prior use by others of methylene blue in fatal cyanide poisoning including our demonstration experiment. He sent Mrs Brooks references to the literature on the subject. In her report Mrs Brooks (*Proc Soc Exper Biol & Med* 29 1228 [June] 1932) merely claimed a shortening of the recovery period to about one third from depressant but not fatal inhalations of hydrocyanic acid in rats receiving intraperitoneal injections of methylene blue which is different from an action of the dye in surely fatal poisoning.

I made a survey of the treatment of poisoning cases in the six emergency hospitals of San Francisco at the request of Dr Geiger April 22 1932 and made an outline of directions for the treatment of poisoning not only from cyanide but from many other drugs as well. In making this outline I drew freely on the *Hospital Practice for Interns* published by the American Medical Association and also on *Practical Toxicology* and other sources and on my own experience. Full

credit to the American Medical Association and to Brundage has been given in the outline of directions now used in the emergency hospitals here. The A. M. A. handbook referred to does not include cyanide, but this poison, together with methylene blue and some other antidotes, was included in the outline submitted to Dr Geiger.

A consideration of all the facts indicates that the publicity in the lay press and the annoyance over credit which have followed the use of methylene blue in a case of cyanide poisoning in which mixed treatment was used have been uncalled for regardless of the scientific merits of the case.

P J HANZLIK M.D., San Francisco

Professor of Pharmacology, Stanford  
University School of Medicine

### EVALUATION OF KNOWLEDGE OF TUBERCULOSIS AND THE FAMILY DOCTOR

*To the Editor*—In *THE JOURNAL*, Dec 10, 1932, page 2050, was a communication from Dr J A Myers relative to the indication at this time for the evaluation of our knowledge of tuberculosis. In considering tuberculosis and the possibility of reappraisal of our charge at this time, should not the position assumed by the family doctor be taken into consideration? In spite of all the time and energy of many enthusiastic lay workers directing clinics and other case finding agencies, the family physician remains the only one who has ever actually found a case. He has so well demonstrated his superiority in this particular field that it has been almost deserted by its recent champions. If the family doctor can prove himself the most competent case-finding agency, should not a step or two further in this direction be taken and the problem of postsanatorium convalescence and rehabilitation be made the responsibility of the family doctor also?

Each sanatorium has depended on the family doctor for most of the beds occupied. If this is true, would it not be a wise policy for the sanatorium to receive each patient, so far as possible on a copartnership basis with the doctor whose services reach both ways, far beyond the short institutional experience of a single member of the family group? Much effort has been made to determine the recoveries following sanatorium care. Since many cases are now found presenting extensive parenchymal infiltrations without symptoms or history of symptoms, the x-rays being the only determining factor I wonder just how far the sanatorium has served a necessary function in the recovery of those credited to it. After all if the sanatorium is a part of the equipment of preventive medicine, is this question one of paramount importance?

Many years ago in the early days of sanatorium construction heated discussions arose as to their function. One group defended the theory that the institution served primarily for tuberculosis prevention and was therefore a part of the equipment of the state and of preventive medicine. The second school insisted that such institutions should exist primarily to render therapeutic aid and that the use of the institution for purposes of control was theoretical and incidental. In the light of present knowledge which school is on the better footing? Does the program of the sanatorium as exhibited today show evidence of weakness or in need of an appraisal at this time?

It has been customary for the medical profession to render all possible aid to the end that beds be added to beds in the institutional care of the tuberculous. Many patients are cared for during a long period of time with negative sputum. Possibly 30 and even 50 per cent of the cases in sanatoriums over three months might belong to this negative sputum group. Should the tuberculosis problem be extended or should this group not forming a public health problem be returned to the family doctor and to the taxpayer's relief?



The work done by the Committee on the Costs of Medical Care has aided materially in the accomplishment of at least one service. It has helped to bring the outposts of the medical profession—the specialists and the institutional men—back to their original position of support to that foundation of the profession, the family doctor.

H. A. BURNS, M.D., Ah-Gwah-Chung, Minn.  
Superintendent, Minnesota State Sanatorium

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### INFILTRATIONS OF HAND

To the Editor—A woman, aged 47, came to the hospital with a markedly swollen left hand, tender on palpation, with the fingers flexed. The swelling had extended somewhat under the annular ligament, as demonstrated by the tenseness and slight swelling immediately above the wrist. She complained of severe pain, and she abstained when possible from using this hand. The swelling was present on both palmar and dorsal aspects, with an obliteration of the normal palmar concavity of the hand. The fingers also were tender and swollen, and painful when extension was attempted. There was no redness present anywhere. The history was rather vague. The patient does not remember any definite pin prick or cut but thinks the thumb was the origin of the trouble and recalls vaguely some puncture sustained a few days before on her thumb. The thumb was not swollen more than the other fingers. The leukocyte count on the first day of entrance was 14,220, with 81 per cent polymorpho-nuclears and 17 per cent lymphocytes. The urine revealed 4 plus albumin, with hyaline casts and a faint trace of sugar with 20 drops. The Wassermann test was not made. Because of the questionable diagnosis with no evidence locally of pus, incision was delayed for four days. Hot applications were made continuously, with no relief or evidence of localization. The temperature fluctuated daily from 98.6 to 100.8 F. (orally). As pain was continuous, with no relief, one incision was made on the palmar aspect of the hand, between the fourth and fifth fingers. No pus was present when the various sheaths and tendons were probed. The subcutaneous tissue seemed indurated and thickened. A gutta serena drain was inserted and hot applications were made. The patient has been relieved somewhat but still complains of pain. Morphine was used to quiet her pain. No epitrochlear nor axillary lymphadenopathy was present. The fifth digit at present is more reddened and swollen than the others. The patient still continues to hold her hand in a claw position. I would appreciate any suggestion which you may offer regarding this case, as far as diagnosis and treatment are concerned.

M. D., Illinois

ANSWER—From the facts as given it is impossible to make an accurate diagnosis as to the condition present. It could be a diffuse cellulitis of the hand and lower end of the forearm secondary to an abrasion or cut that had escaped the patient's attention. It could be, and this possibility seems less likely, an infection of the flexor tendon sheath of the thumb, which had extended upward to the wrist, crossed to the expansion of the tendon sheath of the little finger, viz., the ulnar bursa, and extended distal in the hand within the flexor tendon sheath of the little finger. In the latter event one would expect a higher fever and a more severe systemic reaction than is suggested by the facts given, although no definite mention is made as to the patient's general reaction other than pain which necessitated morphine to relieve it.

A third and still less likely possibility is a metastatic infection from some other part of the body. This does not commonly occur in the soft tissues of the hand, but occasionally one sees patients with an acute swelling and tenderness of the hand and lower end of the forearm which simulate closely infection of the fascial spaces of the palm but which are in reality due to a diffuse cellulitis secondary to a metastatic infection from the teeth, tonsils, mastoid or some other primary focus.

The notes state that no pus was present when the various sheaths and tendons were probed during an exploratory incision. Probably the most certain way of determining the presence of pus within the tendon sheaths of any of the fingers in cases of doubt is to secure a bloodless field with the help of a constrictor or blood pressure apparatus and with the patient anesthetized with nitrous oxide or ethylene to cut down carefully to the tendon sheath. If there is pus within the sheath, the synovial covering will have lost its transparent appearance, it will appear cloudy and distended with fluid and it will not be possible to see the white glistening tendon shining through it. When such a sheath is opened, the pus escapes quickly.

Unless, however, one has a bloodless field and the patient is completely anesthetized it may be quite impossible to recognize the sheath, particularly in the palm, where the tendon sheaths of the thumb and little finger lie rather deep and partially hidden by overlying muscle and fascia.

In the first possibility suggested, the symptoms should clear up with the continued application of warm, wet, sterile dressings. If the infection is within the tendon sheaths, definite symptoms of its presence should appear quickly. The most important of these is the exquisite pain on attempting to extend the affected finger and the numbness of the palm and fingers which appears comparatively early because of the pressure of inflammatory exudate on the median nerve. Metastatic infections may subside completely with rest and warm wet dressings, or definite evidence of localization may appear subsequently.

### CHANGES IN MILK PROTEIN AFTER BOILING

To the Editor—I am especially interested in the changes that may be produced in milk protein by prolonged boiling (from six to eight hours) or by a shorter period of heating under pressure to from 108 to 120 C. It is said that certain infants sensitive to raw cow's milk can take milk that has been thus treated, owing to certain changes produced in the milk protein by heat, but I have never been able to find any one who knew just what these changes are, or indeed whether there are any changes other than coagulation of the lactalbumin. Please omit name.

M. D., Massachusetts

ANSWER—The nature of the changes that take place in milk when it is boiled is by no means fully known or clearly explained. The temperatures indicated bring about a certain rearrangement and alteration of the mineral balances of milk, which in turn have a direct bearing on the character of the coagulum of the heated versus the raw milk. The heating of milk renders certain soluble phosphates insoluble. Various hypothetical explanations have been advanced as to the exact reactions taking place, but all such explanations require further evidence to complete the picture. It is concluded, and probably rightly so, that this alteration in mineral balance is the primary cause of the difference in character of the coagulum and coagulability of heated versus raw milk. The coagulum of the heated milk exists as relatively fine particles which do not readily coalesce into large masses in vitro or in the stomach. The obvious explanation as to the greater digestibility of heated milk is that these finely divided particles present a greater surface area to the digestive juices.

At the temperature indicated and even at the boiling temperature for only a few moments, a considerable proportion of the lactalbumin is coagulated. Probably this coagulation of the lactalbumin in the presence of the casein and natural salt balances has a mechanical effect which contributes to a degree in causing the characteristic coagulum of heated milk. It remains to be learned whether this associated effect is the primary cause or the secondary result of alteration in the mineral balance. Presumably the physical effect of the coagulation of the albumin must be considered as well as the alteration in mineral balance.

In addition to these possible phenomena it is probable that some 'denaturing' effect takes place in the casein as a result of exposure to high temperature. This 'denaturing' effect is only a blanket term used for convenience to cover what is not known regarding the exact mechanism of the changes. From the physical standpoint, however, it is perfectly conceivable that an effect analogous to dehydration of the protein may take place.

Altered milk or milk that has been subjected to prolonged heat treatment and/or dried milk is recognized as less allergic than raw, pasteurized or quickly boiled milk. Milder cases of hypersensitivity to milk may be controlled by the use of milk that has been subjected to a moderate heat treatment, severer cases may be relieved by using milk that has been subjected to prolonged heat treatment in which the proteins are more profoundly altered.

It is a common property of proteins that their chemical structure and properties are altered by physical and chemical treatments. These changes are referred to as 'denaturation' and the resultant proteins as 'denatured' proteins. Derived proteins are derivatives formed through hydrolytic changes of the original protein molecule and result from the action of acids, alkalis, heat and enzymes. Heating at temperatures of from 125 to 150 C. in an autoclave for several hours is a common procedure for accomplishing hydrolysis by heat alone. Denaturation is an intramolecular change and occurs more rapidly at higher temperatures and higher concentrations of hydrogen and hydroxyl ions.

Although the phenomenon of denaturation has been studied for many years there is still no agreement concerning the nature

of the change in the protein molecule. Investigations lead to the assumption that denaturation involves the hydrolysis of some internal linkage in the protein molecule. Amino or carboxyl groups are not liberated, however, which indicates that denaturation does not involve peptide linkage.

#### TECHNIC OF INCREASING WEIGHT

To the Editor—A woman aged 21 has been underweight for a number of years. All her family are thin but not necessarily underweight. Her height is 5 feet 3½ inches (162 cm), weight 95½ pounds (43.4 Kg.) dressed but in her stocking feet. I have been treating her for about one year attempting to increase her weight. During this period I have used drugs, tonics, diet, regular exercise, regular habits, insulin and suggested pleasant types of recreation. In general her health is good although she states that she never seems to feel ambitious or as she states it, peppy. During a period of about two months while on insulin she says she felt unusually well. She is not on insulin now. Examination of the urine and blood gives negative results. Her appetite is usually excellent. Please omit name. M D, West Virginia

ANSWER—This story sounds rather typical of certain persons who under ordinary conditions seem destined to unusual thinness. There is a possibility, not covered by the notes on the case, of some endocrine dyscrasia. One would want to know the basal metabolism, the menstrual history, and whether there are any stigmas of endocrine disturbance, such as an unusual abundance of hair, dry skin, or trophic disturbances of the nails. If there are evidences of some endocrine imbalance, an attempt at endocrine therapy is advisable, depending on the facts. If, on the other hand, the complete physical examination reveals no evidence of glandular disturbances, the problem of therapy is going to be difficult. A continuation of insulin in doses large enough markedly to increase appetite is almost sure to be followed by gain in weight. There is not much accomplished unless insulin is used in sufficiently high doses to make the patient want to take considerable extra food. Frequently this means 10 units three times a day, although of course the minimum necessary to attain results should be used. At times the increased appetite produced by insulin continues in the post-insulin period. Certainly there is no way of increasing weight other than by a food intake greater than the individual's energy expense.

#### SOLUTIONS OF SODIUM LACTATE

To the Editor—How is molecular sodium lactate prepared and in what strength is it used intravenously? Is this solution what is known as Hartmann's solution when Ringer's is added to it? How does it compare with 5 per cent sodium bicarbonate when each is given intravenously in raising the carbon dioxide combining power? Is not its action quicker than the sodium bicarbonate solution? Please give definite instruction for preparing this solution. Why wouldn't it be better to use in diabetic acidosis than the sodium bicarbonate solution? Please omit name.

M D Texas

ANSWER—Chemically pure lactic acid 85 per cent, such as is marketed by the Mallinckrodt Chemical Company, is about 10 molar in strength. Because of its concentration it also contains some of the anhydride of lactic acid. To convert it to neutral molar sodium lactate, it is necessary, first, to hydrolyze the anhydride and then to neutralize all the acid with sodium hydroxide. In detail the procedure is as follows: For 1000 cc of molar sodium lactate 100 cc of chemically pure 85 per cent lactic acid is taken. 600 cc of distilled water and a small amount of phenol red (phenolsulphonphthalein indicator) are added to this. 40 per cent sodium hydroxide (approximately tenth normal) which has stood long enough for the sodium carbonate present to have settled to the bottom is added and decantation of carbonate-free sodium hydroxide is permitted until the solution is just alkaline. Then the mixture is heated to boiling and kept boiling slowly for forty-five minutes. Gradually the anhydride present is hydrolyzed into free acid which then causes the mixture to become acid (yellow reaction). As acidity develops 40 per cent sodium hydroxide is added, drop by drop to keep the solution faintly alkaline. After forty-five minutes hydrolysis is complete. Then the faintly alkaline solution is made up to 1000 cc. with distilled water and is then molar sodium *r*-lactate. It can be sterilized by boiling or autoclaving.

When 10 cc. of molar sodium lactate is added to 450 cc. of slightly hypotonic Ringer's solution the mixture becomes almost identical with Hartmann's solution.

As 84 per cent sodium bicarbonate is molar 5 per cent would exert only 5/84 per cent of the effect in raising the carbon dioxide that molar sodium lactate exerts.

The action of sodium bicarbonate given intravenously is due in part to increase in the carbon dioxide content of

the plasma and intercellular water. The effect of sodium lactate is more gradual, requiring about two hours for complete conversion into sodium bicarbonate. This more gradual effect is one of the principal advantages of sodium lactate (Hartmann, A F, and Senn, M J E. Studies in the Metabolism of Sodium *r*-Lactate. I. Response of Normal Human Subjects to the Intravenous Injection of Sodium *r*-Lactate, *J Clin Investigation* 11 327 [March] 1932).

Sodium lactate is much to be preferred in the treatment of acidosis, particularly diabetic acidosis, as it may be given intravenously, subcutaneously or intraperitoneally more safely in larger doses than sodium bicarbonate can be given (Hartmann, A F, and Senn, M J E. Studies in the Metabolism of Sodium *r*-Lactate. II. Response of Human Subjects with Acidosis to the Intravenous Injection of Sodium *r*-Lactate, *J Clin Investigation* 11 337 [March] 1932).

#### HYPERCALCEMIA AND THE PARATHYROID GLANDS

To the Editor—Does an increase in bone calcium in a child indicate a hypoparathyroid or a hyperparathyroid condition? What is the exact relation between the parathyroid and bone calcium? What is the correct treatment for a child with excessive calcium in bones? The case I have in mind shows nothing but excessive bone calcium. Please omit name.

M D South Carolina

ANSWER—The writer of the inquiry does not say how he discovered the increase of bone calcium in the living child. It may be assumed, however, that the condition was ascertained by roentgen examination. If the parathyroids are completely extirpated, or if a hypocalcemia occurs from any cause, there is not an increased deposition of bone salts as might be expected. The bones in hypoparathyroidism are of poor quality and the teeth are defective, and the concentration of calcium in the blood serum is abnormally low.

In case of tumor of the parathyroid or the administration of parathyroid extracts, the evidence seems to show that the hypercalcemia that ensues is the result of the mobilization of calcium from the bones and the calcium is deposited in the blood producing a high serum calcium.

There is a condition described by Barr, known as hyperparathyroidism which is characterized by rarefaction of bone, increased calcium in the urine and a hypercalcemia, usually secondary to parathyroid hyperplasia or parathyroid tumor.

The use of viosterol, quartz lamp treatment, sunlight and, to a lesser degree, cod liver oil tends to heal rickets by causing a deposition of calcium in the bone and by increasing the calcium level of the blood serum. While this improvement in rickets and the increase in blood calcium may be demonstrated clinically, it has not been shown what the effects of these remedies are on the function of the parathyroid gland itself. From what has been stated it is obvious that the relationship between the parathyroid gland and an excess of calcium in the bone is difficult to establish, if it exists at all. For the same reason it is not possible to postulate dogmatically about the treatment of a condition that has been so little studied probably because of its rare occurrence. It seems that it would be justifiable to say that all known substances that increase the blood calcium, such as viosterol, the quartz lamp and, to a lesser degree, cod liver oil, should be avoided. It has also been suggested that if the diet is of such a kind as to yield an acid ash the elimination of calcium in the urine will be increased. Consequently a prolonged ketogenic diet with the production of ketosis may increase the elimination of calcium and result in a loss of this substance from the bone.

#### UREA DETERMINATION—MICROCOLORIMETERS—OXIDASE TEST IN GONORRHEA

To the Editor—I should like to have your opinion concerning suitable methods for a general practitioner in determining values for blood sugar, urea, uric acid and creatinine. In this connection please give me your opinion concerning the following: 1 The Hensch-Aldrich method for determination of blood sugar and urea. 2 A G Sheffert's microcolorimeter. 3 The Hellige microcolorimeter. 4 Is much value placed in the oxidase reaction in gonorrhea? (J N O Price in the *British Medical Journal* Feb 2 1929) particularly in connection with prognosis or as a diagnostic aid in gonorrhea? Here my interest concerns the chronic cases frequenting the clinic patients with a continuing discharge but a negative smear.

W M PFEIFFER M D, Quebec

ANSWER—1 There is no Hensch-Aldrich method for the determination of blood sugar. Their method is for the mercury combining power of blood which gives an index of the urea retention of the body. By means of a formula a good approximation of the blood urea can be made. With certain modifications it is also applicable for use on saliva and other body fluids. The value of the method has been confirmed in

a large number of articles, mostly in foreign journals. Suggested references are White, E. C., and Ricker, H. C. Experience with the Hensch-Aldrich Method for Determining Blood Urea, *THE JOURNAL*, April 20, 1929, page 1324, and Fairley, K. D., and Splatt, Beryl. A Simple Technic for the Estimation of Blood Urea. *The Hensch-Aldrich Method*, *M. J. Australia* 1 517 (May 8) 1926.

The authors of this method do not claim that it is a highly exact method but regard it as a useful chemical and clinical procedure for the general practitioner. Apparatus for this test is put out by the LaMotte Chemical Company and also by Hynson, Westcott and Dunning, both of Baltimore. The LaMotte Company also puts out apparatus for the determination of blood sugar by a method adapted for small office laboratories.

2 The Sheffel microcolorimeter has just been put on the market and is described in a recent issue of the *Journal of Laboratory and Clinical Medicine*. It is made by the MacGregor Instrument Company, Needham, Mass. It has been so recently put on the market that information is not available as to its merits. The principle of it seems to be quite satisfactory.

3 The Hellige microcolorimeter was, of course, put out years ago. Microcolorimeter methods generally are only roughly accurate and this type of colorimeter is not as practical as any Duboscq colorimeter, such as the Klett Bio-colorimeter.

4 We are not familiar with the oxidase reaction in gonorrhea and do not believe that it has obtained any widespread recognition.

#### HYPERSUPRARENALISM, HYPERTHYROIDISM OR OTHER DYSFUNCTION

*To the Editor*—Is there any test for distinguishing the syndrome of hypersuprarenalism from an atypical hyperthyroidism? A patient has moderate exophthalmos, an inconstant tremor, tachycardia (from 110 to 120 beats per minute) and premature graying of the hair. Loss of weight has not been marked or progressive. The thyroid gland is not enlarged. The heart has not suffered apparent damage after five years of the illness, the present blood pressure being 115 systolic and 75 diastolic. There is a marked lack of perspiration even on exertion during hot weather. Sudden noises and emotional excitement result in a rise of the pulse rate often to 170 per minute. Coitus results in nausea and vomiting. Atropine administered preliminary to tonsillectomy six years ago resulted in symptoms of collapse. Rest, removal of foci of infection and the use of iodine have not influenced the symptoms at all. Do these symptoms best fit hyperthyroidism, hypersuprarenalism or some other type of sympathicotonia? The patient is a devoted wife and mother, 26 years of age. There are apparently no domestic difficulties. The basal metabolic rate is plus 14. The skin is not excessively oily. There is no virilism and no palpable abdominal mass. There is an appearance of premature aging and graying of the hair. What is the present status of the use of x-rays in the treatment of hyperactivity of the suprarenal glands? Please omit name and address.

M. D., Georgia

*ANSWER*—With the data at hand, neither the diagnosis of hypersuprarenalism nor that of atypical hyperthyroidism is justified. The details that are given, however, are unquestionably inadequate.

There is no single test that will differentiate between hypersuprarenalism and atypical hyperthyroidism, but a striking increase in the basal metabolism would be preponderantly in favor of the latter. The moderate exophthalmos and tachycardia with an inconstant tremor, suggest hyperthyroidism, but the absence of sweating, particularly on exertion during hot weather, and the lack of result from iodine therapy would seem to suffice to nullify these. The crucial test should be made, namely, determination of the rate of basal metabolism. If this is excessively high further studies from the standpoint of hyperthyroidism should be followed up, with persistent treatment directed along this channel.

Nothing in the record suggests hypersuprarenalism. Hirsutism and virilism and a change toward the masculine are lacking, as they are not mentioned. If the skin is greasy, acne is present and if with these two things there is a questionable abdominal mass in either flank this possibility also should be pursued further. Any large suprarenal tumor will displace the kidney, so that a pyelogram might indicate its presence.

The exaggerated response to noises and emotion suggests an unstable nervous system, as does the response to intercourse. A functional basis for this nervousness should not be overlooked. Careful search should be made for everything pertaining to domestic difficulties, maladjustment or the existence of some unusual toxemia. This type of picture is not infrequently associated with a low grade continuous fever and if this has not been excluded the temperature curve should be carefully studied. Roentgen treatment of the suprarenal glands

may result in striking clinical improvement when cortical tumors are present. It controls symptoms and retards the disease but is not curative in nature. The lack of sweating in itself may be significant. This may be followed later by extreme asthenia and degenerative changes in the muscle.

#### MATERIALS FOR ARCHES AND FOOT SUPPORTS

*To the Editor*—Can you tell me where I can buy a satisfactory material to use in foot supports and arches? Some shops make satisfactory supports but charge a lot for them. Some material that will stand up after being molded to the feet and covered is what I want.

DONALD F. MACDONALD, M.D., Taunton, Mass.

*ANSWER*—Various materials, including metal, celluloid, rubber, wood and felt, have been used for making arch supports. The metallic materials are german silver, aluminum, duralumin and monel metal. In order to fashion these, a lead block secured in an anvil and a ball peen hammer are necessary. Celluloid is used in two ways. It may be obtained in large sheets like blotting paper, or scraps of celluloid may be dissolved in acetone, making a thick cream. When sheet celluloid is used the pattern is cut, and after it is made soft, by submersion in boiling water, it is removed and molded to the plaster cast of the foot by the hands, which are protected by heavy rubber gloves. When the celluloid-cream method is used, the cream is applied in successive layers, impregnating crinolin or stockinet. "Moving picture glue" is sometimes used for this purpose.

Rubber is used both raw and molded. It can be obtained in sheets of hard rubber, soft rubber and sponge rubber. It is cut, trimmed and either filed or put on the emery wheel.

Wood is used in very thin layers of veneer, which are cut, trimmed and glued in successive layers.

Felt is obtained in sheets of various thicknesses, resilience and colors.

Most of these materials can be used with or without a covering of leather or an insole. In order to make a corrective appliance, one should have a plaster-of-paris model of the foot which is trimmed and shaped, so that the arch support may exert a corrective force.

#### STERILITY

*To the Editor*—A barren marriage has occurred in a woman, aged 32, weighing 230 pounds (104 Kg.) with good general health. Menstruation has always been regular and without difficulty. At the age of 19 she became pregnant but aborted at three months, this by a former marriage. With this exception the history is negative. Physical examination reveals no pelvic abnormality. The Wassermann reaction is negative. The husband is 34 years old, well developed and in good health. By a former marriage he had one child and his wife died. Examination of the semen on three occasions reveals many spermatozoa, normal to all appearances but amotile and apparently dead. The semen was kept at body temperature for the thirty minutes after ejaculation in a condom. His Wassermann reaction also is negative. He admits having gonorrhea fifteen years ago but without complications and no epididymitis. Please omit name.

M. D., Ohio

*ANSWER*—A condition, as referred to, in a patient with a gonorrheal history gives as a rule a rather favorable prognosis. As therapeutic measures, systematic dilation of the urethra with metallic sounds of increasing size, regular massage of the prostate and seminal vesicles and medical diathermy, the active electrode to be placed in the rectum, may be employed. Repeated intramuscular injections of compounds derived from the anterior half of the pituitary body quite often have a favorable influence on restoring motility of the spermatozoa. It is, of course, understood that the permeability of the fallopian tubes is ascertained by proper investigation.

#### SERVEX

*To the Editor*—Will you please give me some information about "Servex," a product of the Servex Laboratories Ltd., Hollywood, Calif.

M. D., New York

*ANSWER*—No report on "Servex" has been made either by the Council on Pharmacy and Chemistry or by the A. M. A. Chemical Laboratory. In December, 1930, the Burnham Snow Products Company, Hollywood, Calif., distributors of "Servex," inquired regarding the details of procedure in the submission of a product for inclusion in New and Nonofficial Remedies. The firm was sent these details but did not submit "Servex" for consideration by the Council.

In the advertising for this product there appears the following statement in regard to composition: "The formula of this antiseptic includes boric acid, quinine, chinolol, oxyquinoline, zinc

phenolsulphonate, scientifically prepared in proper proportions and blended together by our exclusive, scientific process. This statement is nonquantitative and therefore essentially meaningless. It includes both Chinosol—which is oxyquinoline sulphate—and “oxyquinoline.”

Recently the product was found misbranded by the Food and Drug Administration of the United States Department of Agriculture (Notice of Judgment 18946, June, 1932). Analysis by the government chemists showed the product to consist essentially of boric acid (86 per cent), oxyquinoline sulphate (Chinosol), and quinine sulphate, perfumed.

#### DRUGS INFLUENCING SEXUAL DESIRE

To the Editor—What status if any has saltpeter as an anaphrodisiac? Many stories state that this chemical is used in the army in prisons and in other institutions for this purpose. It was claimed that the vehicle for its administration was coffee. It seems to me that the dose would have to be exceedingly small if the mixture was to remain palatable. Where might I find detailed information on the use and dangers of this and other anaphrodisiacs and aphrodisiacs? These questions are discussed frequently among my colleagues and occasionally with patients and it seems that there is only vague information available on the subject.

LAMBERT J NEJDL MD, Chicago

ANSWER—Saltpeter acts as an anaphrodisiac, if it acts this way at all, by diluting the urine and making it less irritating just as on the other hand irritant drugs excreted into the urine, such as cantharides, capsicum and volatile oils, may reflexly excite the sexual organs. In “Pharmacotherapeutics,” by Solis-Cohen and Githens (New York, D Appleton & Co, 1928) may be found a chapter on “Drugs Influencing Sexual Desire,” which might answer some of the points under discussion. The reputed use of saltpeter as an anaphrodisiac is not based on scientific data.

#### USE OF CAUSTICS IN NOSE FOR HAY FEVER

To the Editor—In the October 19 issue of the *Medical Journal and Record* there was an article by Dr G F Chandler concerning hay fever being cured by carbolic acid (full strength) applied to the nasal mucosa. Is this method safe? In Cushman's textbook on pharmacology I find that phenol causes irritation and necrosis of mucous membranes. I should appreciate learning more about this method of treatment. If this is published please omit name.

MD New York

ANSWER—The use of cauterizing agents of one type or another for the relief of hay fever and other hyperesthetic conditions of the nose is well known. Such agents may be the actual cautery, chromic acid in strengths of from 50 to 100 per cent, full strength trichloroacetic acid, or phenol (carbolic acid), full strength. It is difficult to believe that there is any special virtue in phenol. Applied to certain so-called sensitive spots with care and the caustic action being neutralized quickly with alcohol phenol should have no more and no less virtue than any of the other agents named. There are few men who will agree that hay fever can be cured by the application of phenol or any other substance locally in the nose.

#### TOXICITY OF NUPERCARINE

To the Editor—In *Queries and Minor Notes* (THE JOURNAL Dec 3 1932 p 1973) occurs a caution regarding the toxicity of nupercaine which may lead to misunderstanding.

One should distinguish between absolute and relative toxicity. True nupercaine is absolutely fully equal to cocaine in toxicity as judged by subcutaneous injection into dogs. On the other hand it has been shown to be more powerfully anesthetic so that its relative toxicity may eventually be found to be less than that of cocaine by injection. Indeed so far as I am aware there is no proof that nupercaine in proper anesthetic concentration is more toxic than procaine in similar anesthetic strength. Unfortunately through carelessness or ignorance nupercaine has been used in some instances in far greater concentration than is necessary or advised and the disastrous results have been ascribed unjustly to the drug and not to its user.

My associates and I have been using nupercaine now over three years for surface infiltration caudal and subarachnoid anesthesia. In the urethra we employ 1-250 solution injecting a total of about 20 cc in the anterior and posterior urethra. This procedure has been followed in approximately 1000 patients and we have yet to observe an instance of toxic reaction. There is no doubt in my mind that the injection of 1-250 solution of nupercaine into the urethra may cause poisoning if it is done with carelessness. Likewise there is no doubt in my mind that the intrarethral injection of 4 per cent procaine hydrochloride may cause even a fatal reaction if it is done soon after instrumentation or if undue force is used in making the injection.

In my opinion there is no foolproof local anesthetic that is truly effective and one cannot too strongly condemn exaggerated claims regarding the safety of the same. On the other hand from personal experience and a fair knowledge of the literature I do not believe that the intelligent use of nupercaine for any type of anesthesia is a better than the intelligent employment of the safe procaine.

A M McLELLAN MD New York

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

ALASKA Juneau March 14 Sec Dr Harry C DeVigne, Juneau  
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS Milwaukee June 12 Sec Dr William H Wilder 122 S Michigan Blvd Chicago  
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The written examination will be given in cities of the United States and Canada where there is a Diplomate who may be empowered to conduct the examination, April 1. The general oral clinical and pathological examination will be held in Milwaukee June 13 Sec, Dr Paul Titus, 1015 Highland Bldg, Pittsburgh  
AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee, June 12 Sec, Dr W P Wherry 1500 Medical Arts Bldg, Omaha  
CALIFORNIA Los Angeles Feb 27 to March 2 Sec. Dr Charles B Pinkham, 420 State Office Bldg, Sacramento  
CONNECTICUT Basic Science New Haven Feb 11 Prerequisite to license examination Address State Board of Healing Arts 1895 Yale Station New Haven Regular Hartford March 14 15 Endorsement Hartford March 28 Sec Dr Thomas P Murdock 147 W Main St, Meriden Homeopathic New Haven March 14 Sec, Dr Edwin C M Hall 82 Grand Ave New Haven  
MAINE Portland March 14-15 Sec, Dr Adam P Leighton, Jr, 192 State St. Portland  
MASSACHUSETTS Boston March 14-16 Sec, D Stephen Rushmore, 144 State House, Boston  
NATIONAL BOARD OF MEDICAL EXAMINERS The examination will be held in centers where there are five or more candidates Feb 13 15 Ex Sec, Mr Everett S Elwood 225 S 15th St, Philadelphia  
NEW HAMPSHIRE Concord March 16-17 Sec, Dr Charles Duncan, Concord  
OKLAHOMA Oklahoma City March 14-15 Sec., Dr J M Byrum, Shawnee  
PUERTO RICO San Juan March 7 Sec. Dr O Costa Mandry, Box 536 San Juan  
VERMONT Burlington, Feb 15-17 Sec, Dr W Scott Nay, Underhill

### Kentucky Reciprocity Report

Dr A T McCormack, secretary, State Board of Health of Kentucky, reports 8 physicians licensed by reciprocity with other states and 2 physicians licensed by endorsement from Aug 17 to Dec 16, 1932. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Louisville School of Medicine		(1929)	Michigan
Ohio State University College of Medicine		(1917)	Ohio
University of Pennsylvania School of Medicine		(1927)	Minnesota
University of Tennessee College of Medicine	(1928)	(1931)	Tennessee
Vanderbilt University School of Medicine		(1929)	Tennessee
Medical College of Virginia	(1906),	(1931)	Virginia
College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Harvard University Medical School		(1929)	N B M Ex
Washington University School of Medicine		(1929)	N B M Ex.

### Maine November Report

Dr Adam P Leighton, Jr, secretary, Maine Board of Registration of Medicine reports the written examination held in Portland, Nov 8-9, 1932. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Nine candidates were examined, all of whom passed. Six physicians were licensed by reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Yale University School of Medicine		(1931)	78
Boston University School of Medicine		(1932)	91
Harvard University Medical School		(1930)	75.8
Tufts College Medical School	(1932)	77	79
University of Buffalo School of Medicine		(1924)	78
University of Vermont College of Medicine		(1904)	78
College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Rush Medical College		(1904)	Illinois
Boston University School of Medicine		(1930)	New Hamp
Harvard University Medical School		(1907)	Ohio
Medical College of Virginia		(1930)	Virginia
University of Vermont College of Medicine	(1932)	2)	Vermont

### Nevada November Report

Dr Edward E Hamer, secretary Nevada State Board of Medical Examiners, reports the written examination held in Carson City Nov 7-9, 1932. The examination covered 11 subjects and included 110 questions. An average of 75 per cent was required to pass. Two candidates were examined, of whom

I passed and I failed Two physicians were licensed by reciprocity with other states The following colleges were represented

College	PASSED	Year Grad	Per Cent
College of Medical Evangelists		(1932)	82
College	FAILED	Year Grad	Per Cent
Maryland Medical College		(1906)	71.4
College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Illinois College of Medicine		(1931)	California
St. Louis University School of Medicine		(1909)	Utah

Book Notices

**Alcohol and Man The Effects of Alcohol on Man in Health and Disease** Editor Haven Emerson M.D. De Lamar Institute of Public Health Columbia University Associate editors Henry A. Christian M.D., Rold Hunt, M.D. Arthur Hunter LL.D. F.R.S., Charles C. Lieb M.D. Walter R. Miles, Ph.D. and Ernest C. Stillman M.D. Cloth Price \$3.50 Pp 451 with illustrations New York Macmillan Company 1932

There have previously been published compilations of the available knowledge concerning alcohol and its effects on the human body It is doubtful whether any thus far made available are as thorough as this book which Dr Haven Emerson has edited or more scientific It is doubtful whether any of those who have written the various chapters can be accused of unscientific bias on one side or another of the problems discussed The names are such as would commend respect in any scientific group The various sections of the book concern the effects of alcohol on human functions, the effects of alcohol on the cell and on heredity, alcohol as a poison and as a medicine, alcohol and body resistance the effects of alcohol on man's conduct and mentality, and the effects of alcohol on longevity The conclusion may be derived that alcoholic beverages used in moderation never appreciably shortened any one's life At the same time it must be remembered that the use of alcohol to excess is distinctly harmful and that there is a tendency toward alcoholic habit which may lead to it not only in those of mentally defective character or psychopathic but perhaps also in those not distinctly across the border so far as the mind is concerned This volume makes available accurate information concerning the effects of alcohol on all the tissues of the body and describes its uses in the treatment of disease It is significant that alcohol is not considered a good preventive of colds and therefore should not be taken when one is exposed to cold, but it may be comforting when coming in out of the cold The therapeutic use of alcohol is considered by Harlow Brooks, who mentions its usefulness in old age Dr Joseph L. Miller points out its value in certain forms of infection Dr Henry A. Christian discusses its use as a stomachic and during convalescence Dr Lawrason Brown discusses the value of alcohol in tuberculosis The summary says "As therapeutic agents alcoholic beverages have a place in rendering more comfortable and peaceful the disturbances of chronic disease and old age Sometimes it is useful to increase appetite" This seems to constitute the established usefulness of alcoholic remedies

**Your Hearing How to Preserve and Aid It** By Wendell Christopher Phillips M.D. Consulting Surgeon Manhattan Eye Ear and Throat Hospital New York City and Hugh Grant Rowell M.D. Assistant Professor of Health Education and Physician to the Horace Mann Schools Teachers College Columbia University Cloth Price \$2 Pp 232 with 12 illustrations New York & London D. Appleton & Company 1932

The Appleton series of books on health for the public is one of the best established and best chosen of such series It gains greatly by the publication of the latest contribution on hearing, which is presented by a happy cooperation of an authority in the field with a health teacher The book includes not only a good explanation of the mechanism of hearing and of the system used for evaluating hearing but also a good account of proper hygiene of the ears and a statement concerning lip reading the social aspects of the subject and the use of hearing devices This book is unquestionably the best yet made available for those who are hard of hearing or who wish to have definite information concerning the subject, and it may be recommended without any reservation

**A Handbook of Experimental Pathology** By George Wagoner M.D., Associate in Pathology and R. Phillip Custer M.D. Associate in Research Pathology The School of Medicine University of Pennsylvania Cloth Price \$4 Pp 160 with 22 illustrations Springfield Ill Charles C. Thomas 1932

This handbook should be of value to all teachers and students of pathology who strive to correlate functional and structural aspects by the aid of experimental methods The book will appeal especially to those who wish to observe structural changes in diseased tissues in the early stages, rather than in the end-stages ordinarily seen at the postmortem table The authors have devised or assembled experiments designed "to demonstrate the more important problems in general and special pathology" Definite directions for each type of experiment are given and brief comments or questions are added to aid the student in observing and analyzing the results obtained References to the original articles are also of service The portion of the book describing surgical technique, the care and feeding of experimental animals, types of anesthesia, tables of normal blood values and chemical examination of the blood is excellent The authors are to be commended for their efforts to make the experimental method as applicable to pathology as it has been to physiology As Krumbhaar says in the foreword, "Perhaps it is not excessive, then, to congratulate the authors on this pioneer effort and to hope that it will have an important influence in furthering the acquisition of better concepts of pathology and of a dynamic knowledge of disease processes"

**The Extra Pharmacopœia of Martindale and Westcott** Revised by W. Harrison Martindale Ph.D. Ph.Ch. F.R.S. Vol. I Twentieth edition Cloth Price 27s 6d Pp 1216 London H. K. Lewis & Company Ltd 1932

A publication still popular in its twentieth edition must be of value A perusal of this volume reveals that the pages are replete with information Much of it is valuable A portion of it will not be received with enthusiasm in this country, and a portion will be criticized The therapeutic index is especially referred to as meriting criticism The inclusion of such an index is not a compliment to the training of the medical profession akin to the therapeutic index are abstracts of the results of clinical experiments These follow the descriptions of the drugs used The reference to the original paper is always given, which indicates that the authors are simply recording and not recommending It must be remembered that the volume is British, many references to American literature, which includes the U. S. P. Pharmacopœia, are given New and Nonofficial Remedies is listed under abbreviations but it is not referred to in the text

**The Anatomy of the Human Orbit and Accessory Organs of Vision** By S. Ernest Whitnall M.A. M.D. B.Ch. Professor of Anatomy McGill University Montreal Second edition Cloth Price \$6.25 Pp 467 with 212 illustrations New York & London Oxford University Press 1932

Although the fundamental facts of a subject of this nature always remain the same the author has revised the text throughout and has made numerous additions, all of which have materially improved and justified the appearance of this edition The subject has been treated thoroughly, completely and concisely The text is well arranged and the subdivisions of the subject follow one another in a natural sequence As is necessary in a work of this nature, the author has to good advantage made many references to the works of others and taken quotations from them The subject matter is well illustrated with photographs of a large series of personal dissections and preparations Although these illustrations in almost all instances are as perfect as photographs can be, this edition has been enhanced by the increased number of colored and diagrammatic plates The statement that "the predominant muscles are in capital letters" in the legend to figure 154 which was adapted from Testut, is not borne out by the actual facts In part IV the author briefly describes the cerebral connections of the orbital nerves This part is appropriately titled "appendix," for the subject matter, as well as some of that in the latter portion of part III, is not in the realm of the anatomy of the human orbit However, the brief description of the extra-orbital course and connections is a desirable feature of such a book for it permits of the proper conclusion of the description of the orbital nerves The work is completed by a well chosen, carefully compiled and comprehensive



bibliography of the papers and books relating to the anatomy of the orbit which have been published since 1900. This volume, which should be in the library of every ophthalmologist and anatomist, is suitable as a reference work for rhinologists and neurologists. It is one of the best books, if not the best, on this subject in any language.

**The Hygiene of Marriage. A Detailed Consideration of Sex and Marriage.** By William S. Everett, Ph.D., Central Y. M. C. A. College, Chicago. Foreword by Clara M. Davis, M.D., Associate Physician, The Children's Memorial Hospital, Chicago. Introduction by T. V. Smith, Ph.D., Professor of Philosophy, University of Chicago. Physicians edition. Cloth. Price \$3. Pp. 262 with illustrations. New York: Vanguard Press, 1932.

This book is about equally divided between material discussing the anatomy and physiology, the hygiene, both physical and mental, of sex, and some instructions for proper sexual union as the first part, with material on birth control as the second part. The material on birth control is about as complete and accurate as has anywhere been made available. It includes not only an analysis of the laws on the subject but also a list of all the birth control clinics and a study of their work, an analysis of all the available methods of contraception with their virtues and disappointments, and a good index.

Apparently administration of laws has been relaxed sufficiently to permit general distribution of books of this character, since there has been a veritable flood of them on the market in recent years. Like the laws regarding prohibition, these laws seem to have become obsolete through failure to enforce or perhaps through expression of the public wish in a rather definite manner.

**The Use of Iliodol in Diagnosis and Treatment. A Clinical and Radiological Survey.** By J. A. Sicard and J. Forestier. Cloth. Price \$4. Pp. 231 with 50 illustrations. New York & London: Oxford University Press, 1932.

Iodized poppy-seed oil has been used in diagnosis since 1921. An enormous literature has accumulated on the subject. The material, however, has been scattered in various journals. A book on the subject by the originators of the idea is therefore welcome. The book deals with the various phases of the subject, with chapters on chemical and physiologic studies, on the use of iodized poppy-seed oil in the spinal subarachnoid space, epidural space, bronchopulmonary cavities, the genitourinary system, the blood vessels, the nasal sinuses and the lacrimal ducts, and the estimation of the secretory activity of the stomach. There is also a chapter on therapy, in which the authors discuss epidural therapeutic iodized poppy-seed oil, various forms of algia, arthritis, enuresis, suppurative bronchopulmonary cavities, cold abscesses and tuberculosis of the serous membranes. The book is a useful guide since the authors have done more work on the subject than any other investigators. One must however be careful not to be carried away by the enthusiasm of the authors. Few clinicians advise therapy with iodized poppy seed oil. There is also a reaction against its use for diagnostic purposes in the spinal subarachnoid space. The authors point out how slowly the oil is eliminated from the subarachnoid space but they do not consider this fact a contraindication to its use. It has recently been found that because of its slow elimination it may become a source of irritation to the meninges. Its use should therefore be limited to a few selected cases. The book has been prepared by the junior author as Professor Sicard died before the English translation was published.

**Die Krise der Medizin. Lehrbuch der Konstitutionstherapie. Band I. [Konstitutionstherapie]. Band II. Medikamente und Rezepte.** Von Bernhard Aschner. Fourth edition. Roards. Price 25 marks. Pp. 101. Stuttgart: Hippokrates Verlag C. m. b. H. 1932.

In this thesis the author appeals for a return to the medicine of the days of Paracelsus and Galen whose views prevailed up to about a hundred years ago. He maintains that the relaxation of bloodletting, cupping, emetics and leeching to the junk heap of medicine constituted a great error. He regards such apparently local diseases as glaucoma, amenorrhea and peptic ulcer as general metabolic disorders. Actually the trend of modern medicine is gradually preparing the field for a return to that view. He has struck on the weak point of modern medicine in its tendency to overspecialization. Whether he is justified however in condemning all modern medicine because of overspecialization is greatly to be doubted.

Still more to be doubted is his insistence on a return to ancient and medieval medicine in toto. In his two volumes he ably presents his views on the subject. In the first volume he discusses general therapeutics, such as bloodletting, catharsis and emetics, and their specific application in various diseases. In the second volume he has prepared a list of measures to be used in various syndromes. Some of these measures are medical prescriptions, some are folk medicines and some are the general measures, such as bloodletting, which have been discussed in the first volume. All in all, this work presents as sound an argument for the return to previous theories and therapy as one can find. There seems to be a nucleus of truth in Aschner's conception of disease, but few will care to accept his views on therapy.

**Antony van Leeuwenhoek and His "Little Animals." Being Some Account of the Father of Protozoology and Bacteriology and His Multifarious Discoveries in These Disciplines.** Collected, Translated and Edited from His Printed Works, Unpublished Manuscripts and Contemporary Records. By Clifford Dobell, F.R.S., Protistologist to the Medical Research Council, London. Published on the 300th anniversary of his birth. Cloth. Price \$7.50. Pp. 435 with 32 plates. New York: Harcourt, Brace & Company, 1932.

The publisher has treated this book *con amore*. It is one of the most attractive volumes thus far made available in the field of medical history. The book is large, is handsomely illustrated with engravings, and is written, moreover, with a distinctly human point of view. It contains numerous quotations from Leeuwenhoek's writings as well as those of other people of the time. The father of microscopy is no doubt one of the most important figures in medical and scientific history, but even were this not the fact the book would be interesting, because Leeuwenhoek was himself a most interesting person. In this book, through the letters and writings of Leeuwenhoek, one may sit by his side as he makes his investigations and derive all the pleasure that he himself no doubt had as he extended his observations. The book is completed by an excellent bibliography of Leeuwenhoek's articles, a bibliography of the subject and a good index.

**Die chronische Encephalitis epidemica in ihrer gutachtlichen und sozialen Bedeutung.** Von Dr. med. Rudolf Neustadt, Dozent für Psychiatrie und Neurologie an der Medizinischen Akademie Düsseldorf. Paper. Price 5.70 marks. Pp. 103 with 2 illustrations. Leipzig: Johann Ambrosius Barth, 1932.

This monograph deals exclusively with the social and medicolegal aspects of epidemic encephalitis and has been written for the benefit of those who are called on to give expert opinion or advice in the many troublesome situations in which the unfortunate victims of chronic encephalitis find themselves. It is written with reference to German social conditions and laws, but the same problems exist in all civilized countries. On account of the recognized advanced state of German social legislation, much no doubt can be learned from the handling of these problems in Germany. The criminal aspects, legal responsibility, schooling, institutional care, indications for abortion, relation to insurance, guardianship, and capacity to drive automobiles are all treated with usual German thoroughness.

**The Colon, Rectum and Anus.** By Fred W. Rankin, B.A., M.A., M.D., Associate Professor of Surgery, The Mayo Foundation, J. Arnold Bagen, B.S., M.D., M.S., in Medicine, Assistant Professor of Medicine, The Mayo Foundation, and Louis A. Bule, B.A., M.D., F.A.C.S., Associate Professor of Proctology, The Mayo Foundation. Cloth. Price \$9.50. Pp. 846 with 435 illustrations. Philadelphia & London: W. B. Saunders Company, 1932.

This book covers the diseases of the entire colon, rectum and anal regions in a clear and comprehensive manner, with an inclusive bibliography. The first three chapters are devoted to the anatomy, physiology and developmental abnormalities, with especial reference to their clinical manifestations. Volvulus, intussusception and diverticulosis are described briefly yet accurately. The chapters on chronic ulcerative colitis and parasitic diseases of the large intestine are especially noteworthy. The illustrations and roentgenograms are clear and instructive. The vaccine treatment is stressed, but other therapeutic measures do not receive adequate attention, especially the beneficial results obtained by ileostomy and colectomy. Amebiasis is discussed from various points of view and the therapeutic agents are evaluated. The field of proctology is given a thorough and exhaustive consideration, although the



absence of illustrations of proctoscopic observations is to be regretted. The general treatment of the conditions encountered by the proctologist and the internist is adequate. The neoplastic lesions, both benign and malignant, are given due attention. The more or less standard operative procedures are well described.

**Food and Character** By Louis Berman M.D. Cloth Price \$3.50 Pp 368 Boston Houghton Mifflin Company 1932

Some years ago the author of this volume published a book called "The Glands Regulating Personality." It was a largely imaginative work based on certain scientifically established facts. The present volume accumulates a great deal of material relative to foods culled from all sorts of available works and then endeavors to show that character can be modified by varying proteins and other ingredients of the diet. Perhaps the book was meant to be sensational, but it is so hard to read that it is likely to be neglected. This will be not so bad as there is much in the book that is unestablished. The author concludes that the hope of the world lies in the proper scientific feeding of children and the prevention and correction of ductless gland deficiencies. He even promises rejuvenation and superhealth, a promise which neither this author nor any one else can make good.

**Vitamin Content of Australian New Zealand and English Butters** By M. F. F. Crawford, E. O. V. Perry and S. S. Milva. Medical Research Council Special Report Series No. 175. Paper Price, 1s. Pp 50. London His Majesty's Stationery Office 1932.

This report on the vitamin content of Australian New Zealand and English butters is a part of the broad program of research into the vitamin content of foodstuffs, particularly fruits, vegetables and dairy products, and on the effect of different methods of cultivation, preparation and storage on the vitamin values. Information on butter is of importance, as it is a particularly good source of vitamins A and D in the general diet. The investigations indicate a high and uniform potency of Australian and New Zealand butters in vitamins A and D equivalent to that of butters produced in Great Britain or elsewhere in Europe. The methods of production and handling and the delays in transit have a negligible influence on the vitamin content of the butters as they reach the consumer. These butters are a valuable source of vitamins A and D for the British population especially during the winter season, when the vitamin potency of home or other European butters may be low. The racial origin of the cows providing the butter has no significant effect on the vitamin content. Butters from different parts of Australia are closely equivalent in value. The vitamins of butter have remarkable stability during cold storage. There is no appreciable loss of potency during transit by sea, in instances no notable loss could be detected even after storage for periods of two years, this stability was found whether the butter was stored in large or small quantities or whether prepared from sweet or acid cream. The neutralization of acid creams before churning as practiced in Australia and New Zealand has no destructive value on the content of vitamins A and D.

**New Types of Old Americans at Harvard and at Eastern Women's Colleges** By Gordon Townsend Bowles. Cloth Price \$2.50 Pp 144 with 20 illustrations. Cambridge Mass. Harvard University Press 1932.

It has become apparent through studies made in various universities that the members of the present generation are on the average taller and weigh more than did their parents and grandparents who entered those same institutions in previous years. The author is convinced that the causes for increased stature in the student group are as follows:

- 1 Increased medical attention in preserving those children who have outgrown their strength until they have reached maturity and a normal state of resistance to disease.
- 2 Cultural modernization and a general speeding up process.
- 3 Better food in more abundance and in great variety.
- 4 More exercise.
- 5 Possible assortive and selective mating on the part of parents.
- 6 Occupational change of parents.
- 7 The nonascertainable element of climatological and meteorological effect.

**Acromegaly** By F. R. B. Atkinson M.D. C.M. With a foreword by Sir Arthur Keith. Cloth Price 21s. Pp 260 with 3 illustrations. London John Bale Sons & Danielsson Ltd 1932.

More than two thirds of this monograph is concerned with the reports of 1,359 cases collected from the literature. It is therefore an important document for any one who is interested in studying acromegaly but suffers from the defects of all such compilations, which are written without the critical judgment that comes from first-hand knowledge of the data on which they are based. For example among the tumors of the hypophysis that may cause acromegaly the author notes glioma, angioglioma, sarcoma, epithelioma, carcinoma and psammoma without bringing out clearly that all these diagnoses were made at a time when the pathology of the pituitary gland had not been worked out and that there is every reason to suppose that the disease is associated always with either an increase in the number of eosinophils or an adenoma composed primarily of eosinophils. Again, in discussing the treatment he mentions eight different methods that may be used for operation without bringing out clearly that all these methods have been abandoned with the exception of variations of the frontal or temporal intracranial approach. The effectiveness of roentgen treatment in these cases is also not emphasized but merely mentioned incidentally and the impression is given that surgical treatment is the only hope in these cases whereas the effectiveness of roentgen therapy is greatly reducing the number of operations necessary in acromegaly. The book, therefore, although a useful compilation, cannot be recommended as a critical statement of present knowledge concerning acromegaly.

**Lying and Its Detection. A Study of Deception and Deception Tests** By John A. Larson Assistant State Criminologist State of Illinois. In collaboration with George W. Haney and Leonard Keeler. With an introduction by August Vollmer. Cloth Price \$5. Pp 453, with 60 illustrations. Chicago University of Chicago Press 1932.

This book is of interest primarily to the criminologist although it may of course have value for the psychiatrist as well. The lie detector is essentially a cardiopneumograph which indicates the changes in the heart rate, the respiration rate, the blood pressure and the response of the person under investigation to significant questions. The accuracy would seem to have been well demonstrated. In this book the author discusses the history of attempts to detect lying in the past, including torture, the third degree and the work of prosecuting attorneys before judges and juries. He then discusses word association tests, the scopolamine technique of Dr. House and similar scientific methods, and finally elucidates the use of the cardiopneumopsychograph as applied in various criminal cases. The book is completed with a good bibliography.

**Grundriss der Sportmedizin für Ärzte und Studierende** Von Professor Dr. H. Herzheimer Leiter der sportärztlichen Beratungsstelle an der II. Medizinischen Klinik der Charité Berlin. Boards Price 10.50 marks. Pp 192 with 45 illustrations. Leipzig Georg Thieme 1932.

One of the greatest weaknesses of the present physician is his lack of knowledge of the physiology of exercise. And with the public turning more and more to sports of varying strenuousness as a means of occupying leisure time the family doctor must advise as to the selection and amount of exercise. The family doctor, furthermore, must show greater knowledge of athletic injuries and their immediate and distant implications. There are comparatively few men like Nichols, Richards and Stevens who know both the sport and its hazards and remedies. Herzheimer's excellent book deserves translation into English and is of interest not only to physicians in general but in particular to those whose interests involve health conservation. The first section of the book consists of 133 pages on the physiology of exercise. The author has made a careful study of the literature and provides an excellent bibliography of international research. Sections describe the circulatory apparatus and the respiratory system with briefer mention of such subjects as the nervous system, biochemistry and body temperature. There are excellent graphs. The illustrations include cardiac roentgenograms of marathon runners reminiscent of the studies of Dr. Arlie Bock and others in this field. The second section is on the effects of exercise on the organs and their functions. The sport types are revealed in text and photographs for example marathon runners, middle distance runners, sprinters, high jumper,

discus throwers, and heavy athletes of the Carnera and Sonnenberg modes. Local skeletal changes are studied through roentgenograms of boxers' elbows, football players' knees, and so on. There is a brief section, finally, on the influence of physical chemical and emotional factors. There is an excellent index.

## Medicolegal

### Damages for Death of Infant from Prenatal Injuries

(*Magnolia Coca Cola Bottling Co. v. Jordan* (Texas) 47 S W (2d) 901)

A truck belonging to the defendant the Magnolia Coca Cola Bottling Co., through the negligence of its agent, collided with an automobile driven by one of the plaintiffs, Mrs. Jordan. She, then eight months' pregnant, was crushed against the steering wheel and other parts of the car, bruising her abdomen and back. The collision occurred on Sunday and on the following Sunday morning she gave birth to twins, a boy and a girl. The boy, according to the mother's testimony, was bruised on the left hip and on the external genital organs, there was a scum over his eyes, he did not act right or seem like a baby. Both twins were weak. They did not "nourish", they could not or did not know how. Nineteen days after his birth, the boy died. Death was attributed to the injuries received at the time of the collision.

The plaintiffs, the father and mother of the twins, brought suit. The jury, on special issues, awarded \$5,000 for the damages suffered by the plaintiffs generally and \$1,250 for the damages resulting from the death of their minor son. The trial court entered judgment for the \$5,000 awarded by the jury. It refused, however, to enter judgment for the \$1,250 awarded on account of the death of the child, holding that 'the law gives to parents no cause of action for the loss of services of a child which dies as a proximate result of injuries while it is still quick in the womb of its mother, even though such injuries be inflicted by the negligence of the defendant'. The defendant appealed to the court of civil appeals of Texas, El Paso, from the judgment of \$5,000 and the plaintiffs, by cross assignment, complained of the trial court's refusal to enter judgment in their favor for the amount awarded by the jury for their pecuniary loss through the death of their son.

The Texas statutes concerning the recovery of damages for injuries resulting in death, said the court of civil appeals, limit recovery to those cases in which the injured person, if death had not ensued, would be entitled to maintain an action for the injuries suffered by him. The right of the parents to recover damages in this case depends, therefore, on whether or not the son if he had lived, could maintain an action for the injuries inflicted on him before his birth. In *Nelson v. Railway Co.*, 78 Texas 621, 14 S W 1021, the court was called on to say whether a posthumous child was entitled to recover damages for the death of its father resulting from injuries inflicted by the alleged negligence of the appellee in that case. The mother and two other children had compromised their claim, but later, after the posthumous child was born the mother instituted a suit on his behalf, as his next friend. The Supreme Court concluded that it was the purpose of the legislature to give the right of action in such a case to all surviving children of the deceased and that the plaintiff, although unborn at the time of his father's death, was then in being and was one of his surviving children. The court of civil appeals could see no logical reason in the present case why if an unborn child is considered to be lawfully in being for the purpose of collecting damages for the death of its father through negligence an unborn child should not be considered lawfully in being also for the purpose of collecting damages to its own person. The court concluded therefore, that the infant son of the appellees plaintiffs in the court below in the present case, if its death had not ensued could maintain an action against the appellant and that therefore the appellees' parents could maintain an action for the loss of the child's services. While there are decisions in several of the states holding that damages for prenatal injuries cannot be recovered at common law yet said the court the holding of the Supreme Court of Texas in *Nelson v. Railway Co.*,

supra, shows a tendency toward liberality in the construction of the Texas statutes on the subject, rather than toward the restricted view taken in other states.

The judgment of the trial court was therefore reformed and judgment rendered in favor of the appellees for the sum awarded by the jury on account of the death of the infant son.

### Workmen's Compensation Acts Liability of Employer for Physician's Malpractice

—An employee was injured in an industrial accident. To diagnose the injury, a physician furnished by the employer made roentgenograms and in doing so burned the employee. The employee returned to work in about ten weeks and was awarded compensation for the time lost from work. Approximately a year later the employee ceased work altogether. The roentgen burns had apparently destroyed some blood vessels and burned certain areas of skin so badly that ulcers had developed. The employer denied liability for this injury, which he claimed was due entirely to the malpractice of the physician. Section 4884, Kentucky Statutes, said the Court of Appeals of Kentucky, charges the employer with the duty to provide competent surgical treatment and further provides that if the employee submits to a necessary operation he shall be entitled to compensation for the disability following the operation. Section 4885, *ibid*, provides that no action shall be brought against an employer to recover damages for malpractice to which an employee has been subjected by a physician or hospital. These provisions, continued the court, are not inconsistent. In effect, the employee is entitled to compensation for his disability following an operation, but he cannot sue his employer in an independent action at law, for damages for malpractice, the entire matter is to be settled in compensation proceedings before the compensation board. The disability of the employee here is the direct result of the roentgen treatment and is an actual disability following an operation. The employer, therefore, is liable in appropriate proceedings before the compensation board for the results of the malpractice of the physician furnished by him.—*Black Mountain Corporation v. Middleton* (Ky.), 49 S W, (2d) 318.

### Compensation of Physicians and Hospitals Right to Limit Liability After Express Promise to Pay

—The occupants of an automobile were injured in a collision with a motor bus owned by the defendant. The driver of the bus took them to a hospital owned by the plaintiff physician and directed that necessary treatment and hospitalization be rendered at the defendant's expense. Two days later an investigator for the defendant's insurer determined that the defendant was not legally liable for the injury caused by the collision. Apparently at the request of this investigator, the defendant wrote the plaintiff that he would not be responsible for payment for further services. The plaintiff, however, completed the necessary treatment and hospitalization and sued the defendant for the total amount due. Judgment was given in his favor, and the defendant appealed to the court of civil appeals of Texas, El Paso. The defendant assigned as error the refusal of the trial court to continue the trial in order to enable him to produce the insurance investigator as a witness. This refusal, the defendant contended, affected him adversely, because the investigator would have testified on behalf of the defendant, that two days after the accident he undertook to limit the contract between the plaintiff and the defendant so as to relieve the defendant from liability for future charges. But, said the court of civil appeals, without the plaintiff's assent the defendant could not limit the liability imposed by the original contract. As was said by the Supreme Court of Minnesota in *St. Barnabas Hospital v. Minneapolis*, 68 Minn 254, 70 N W 1126.

The plaintiff having taken in a helpless and severely injured man at the defendant's request and upon its promise to pay for an indefinite time it would be monstrous if the defendant could the very next day summarily withdraw its promise, leave the sick man on plaintiff's hands and put it to the alternative of either keeping and caring for him without pay or else cruelly and inhumanly throwing him into the street.

Since the defendant could not limit his liability under the contract the proposed testimony of the insurance investigator was irrelevant and the trial court committed no error in refusing to continue the trial. The judgment in favor of the plaintiff was affirmed.—*Page v. Thomas* (Texas), 47 S W (2d) 894.

## Society Proceedings

### COMING MEETINGS

American College of Physicians, Montreal February 6-10 Mr. E. R. Loveland 133 135 South 30th Street, Philadelphia, Executive Secretary  
Annual Congress on Medical Education, Medical Licensure and Hospitals Chicago February 13-14 Dr. W. D. Cutter, Council on Medical Education and Hospitals, 535 North Dearborn St. Chicago, Secretary  
Pacific Coast Surgical Association Del Monte Calif. February 23-25, Dr. Edgar L. Gilcreest, 384 Post Street, San Francisco, Secretary  
Southeastern Surgical Congress, Atlanta Ga., March 6-8 Dr. B. T. Beasley, 45 Edgewood Avenue, Atlanta, Secretary

### WESTERN SURGICAL ASSOCIATION

Forty Second Annual Meeting held at Madison Wis., Dec. 9-10, 1932

(Concluded from page 288)

#### Deferred Operation in Treatment of Periappendicular Abscess

DR. KARL A. MEYER, Chicago The present high mortality rate of acute appendicitis is due to the failure to remove the appendix before it perforates. The mortality in the neglected cases, complicated by periappendicular abscess, can be reduced by deferring operation in those cases in which the abscess can be determined to be resolving spontaneously, and draining only those abscesses that continue to spread under Ochsner management. In four cases the periappendicular mass was demonstrable only after the abdomen was opened or the patient was relaxed under an anesthetic. Drainage of the abscess was deferred in all four cases with the spontaneous resolution of the inflammatory mass in three cases and the subsequent drainage of an extending abscess in the remaining case. The treatment of the individual case based on the conditions found will give better results and fewer deaths than routine drainage in all cases of periappendicular abscesses.

#### Surgical Management of Acute Appendicitis with Perforation

DRS. L. G. BOWERS and A. TALBERT BOWERS, Dayton, Ohio This communication is based on a study of 243 consecutive cases of acute appendicitis with perforation, 219 were private patients, while 24 were patients who were admitted to the public service at the Miami Valley Hospital. The mortality rate for the private patients was 71 per cent, in 80 per cent of the cases the appendix was removed at the first operation, in the remaining 20 per cent of cases, drainage was instituted without any attempt to remove the appendix. In approximately 5 per cent of cases in which appendectomy was not done at the time of the primary operation, the appendix was removed from ten days (in two instances) to three months following the original operation, there were no deaths in this group of cases. The mortality rate for the public patients was much higher than that for the private patients, of the twenty-four operative cases of appendicitis with perforation, death occurred in eight instances a mortality rate of 33.3 per cent. A comparison of the histories of the private patients with those who were received in the charity service revealed that the average interval between the onset of symptoms and the time of operation was much greater for the public patients. Furthermore, practically every one of the public patients had taken a drastic cathartic soon after the first occurrence of abdominal pain. It is inevitable that postoperative complications will result in many cases of acute appendicitis with perforation. The early recognition and adequate management of these complications will greatly improve the prospects of a favorable outcome. Appendectomy for acute appendicitis is always a major surgical undertaking. This is particularly true in cases of acute appendicitis with perforation. The complications disclosed during the course of the operation demand prompt decision as to the type of surgical treatment that will most probably produce a favorable outcome. There is no operation in the whole field of general surgery in which surgical judgment and skill are of such paramount importance. Appendectomy for gangrenous appendicitis is never a minor operation. The interests of the patient demand that the surgeon get in early and get out quickly. The advancing death rate from acute appendicitis in this country will not be checked until the full force of these truths becomes generally appreciated.

#### Hemorrhage After Operations on the Biliary Tract

DR. W. T. COUGHLIN, St. Louis Every one agrees that, in hemorrhage from artery or vein the proper thing to do is to find the bleeding point and either tie it or control its supply in continuity. In my opinion, this should be done in any case except the capillary oozing. It is much better to look and see than to wait and see. For the jaundiced patient with capillary oozing, no treatment has done much good. I should remove a bleeding gallbladder on first making the diagnosis. I have tried all remedies from calcium chloride to coagulose. Whole blood transfusion for the first few administrations seems to check the oozing, but only temporarily.

#### Surgical Treatment of Arterial Embolism

DR. ARTHUR ZIEROLD, Minneapolis I am reporting a series of twenty cases of arterial embolism, all but two from the wards of the Minneapolis General Hospital. While the number of cases is yet too small to serve as the basis of any very critical analysis, nevertheless some general conclusions may be drawn. The material here presented consists of eleven surgical cases and eight which were considered nonsurgical. In one case, which remains unclassified, the femoral vein was ligated and the artery was not opened. Although the procedure terminated successfully, it is not included in the operative group. The cases were distributed equally between males and females. The age of incidence is that at which a break in cardiac compensation most frequently occurs, namely, between the sixth and seventh decade, the corrected average for age being 65 years. Of the total number of cases, fifteen presented definite histories of previous cardiac disorders. There are four cases without previous or existing heart disease in which arterial emboli developed in the presence of generalized infection. The one remaining case to be accounted for developed spontaneously in the absence of any other demonstrable disease process. In this series of operative cases, the lapse of time between the initial symptom and operation varied from one and one-half hours to seventy-two hours, in all but three the time being twelve hours or more. While it was possible to restore the circulation, and by this I mean not only pulsation in the immediate neighborhood of the arteriotomy but also warmth and color to the extremities in eight of the cases unfortunately only three survived to be discharged from the hospital. This rather gloomy outlook is somewhat lightened by observation of the patients on whom operation was not performed. Of these, seven, or 87.5 per cent, died within a period of one to fourteen days following the initial symptoms of embolism. It is of interest to note that the length of survival in the two groups is much the same, which would give some basis for the statement that the surgical procedure in itself is not properly responsible for the mortality in this form of treatment. As the end-result of the two series show an 87.5 per cent mortality in the cases in which operation was not performed, and a 72.7 per cent mortality in the cases in which operation was performed, with a corresponding 72 per cent of immediate restoration of circulation, it would appear that embolectomy is a proper and reasonable undertaking.

#### Fatal Hemolytic Crisis One Year Following Splenectomy

DR. CLARENCE G. TOLAND, Los Angeles A woman, aged 48, had the characteristic leukopenia of splenic anemia when she came under observation, with evidence of depressed bone marrow function. Following splenectomy, the white cells immediately rose to 21,000, with an increase in the percentage of lymphocytes to 50. The bone marrow became more active and the red blood cells and hemoglobin rose. One year later she was no longer anemic but there was an apparent decrease in the platelets and the lymphocytes were still high. Then a cataclysmic destruction of blood occurred, overnight the red blood cells dropped to one fifth of normal and the white blood cells rose sharply to 47,000. The patient died of acute anemia unrelieved by blood transfusion. A close fundamental relationship between the original condition of splenic anemia and the later complicating condition of an atypical leukemia would certainly be suggested by this case. The paucity of cases of leukemia developing in patients with splenic anemia tends to discredit such a suspicion. Giffin of the Mayo Clinic in a personal communication says he has seen but three cases of

leukemia develop in such patients, and only one following splenectomy, not one of the three was of an acute hemorrhagic type. Necropsy failed to show any reason for the sudden hemolytic crisis. The liver showed groups of small round cells but there was no enlargement of the lymph nodes. The bone marrow was hyperplastic and microscopically showed active blood formation. The tubular epithelium of the kidneys was swollen and granular, and the collecting tubules contained brownish granular amorphous material with an occasional formed red blood cell. No history was obtained of anything that might have precipitated the crisis. She had been working a little harder than usual for two days preceding the attack but had not been exposed to cold, which sometimes precipitates paroxysmal hemoglobinuria, nor had she been given anything intravenously.

#### Intraperitoneal Rupture of Urinary Bladder in Fracture of Pelvis

DR JAMES P. HENDERSON, Kansas City, Mo. In all fractures of the pelvis one should always suspect a vesical rupture and as soon as the patient has overcome the initial shock, or immediately if his condition warrants, the definite diagnosis should be attempted and all preparations for operation completed. In many cases a diagnosis cannot accurately be made, but, as Alexander has wisely said, if rupture is strongly suspected an abdominal section should be performed. The only excuse for delay is when all signs and symptoms and tests would still leave great doubt as to the existence of such an injury. It makes no difference whether intraperitoneal, extraperitoneal or subperitoneal, immediate operation is required. All these tests are at times valuable but are not always positive and at times may even be very dangerous. The catheter will sometimes return clear fluid instead of tinged urine. A railroad man, aged 32, married, was hit by a freight car over the right side of the pelvis. A sharp pain was immediately felt over the lower part of the abdomen followed by slight shock, and he was sent to the hospital. The next day there was a slight amount of blood in the urine and slight tenderness and discomfort over the hypogastric region. There was only a slight desire to urinate, and catheterization returned only 3 ounces of fluid. Cystoscopic examination revealed a high tear, which on operation was found to be half an inch in extent. The tear was closed and the bladder drained through the urethra with fixation of the pelvis. The patient made an uneventful recovery. This was a case of simple fracture and high tear with slight symptoms. A farmer, aged 42, married, was run over by a team of horses and wagon, the latter going over the pelvis. On admission to the hospital he was under great shock, he had a fracture of the ascending ramus and a wide separation of the symphysis. The shock was treated for a day and the bladder was drained through the urethra. There was a large amount of bloody urine and a very rigid abdomen, which began to increase in size. The patient died the next day. A tear in the bladder  $2\frac{1}{2}$  inches long, a fracture of the pelvis and a 3 inch separation of the pubis symphysis were found. This was a multiple fracture and low tear.

#### Removal of Diseased Cartilage in Monarthrits Without Synovectomy Report of Twelve Cases

DRS PAUL B. MAGNUSON and O. H. HORRALL, Chicago. This is a report of twelve cases of monarthrits, all of which gave a history of trauma. Two gave histories of generalized joint infection which had subsided, one joint having been traumatized subsequent to recovery from the general infection. Three patients had a torn semilunar cartilage acting as a foreign body and the remainder of the series gave histories of severe or oft repeated trauma. All the patients were operated on before April 1930, two and a half years having elapsed since the date of the last operation reported. No synovectomy was performed. Degenerated cartilage, exostoses, pannus and hypertrophied edges of synovial membrane were removed, including many islands of granular tissue on the joint surface. The joints were opened widely so that every surface might be inspected. In the three hip cases the head of the femur was dislocated anteriorly so that the head of the acetabulum could be freely inspected. In the knees a transverse incision through the patella was the method of approach. After treatment consisted of extension with weight varying from 6 to 10 pounds. Motion was started by the patient as soon as the wound had

healed. This was done by means of a sling under the knee, attached to a rope on a frame above the bed, in such a way that the patient could lift the leg by pulling the rope. All the patients in this series have made functional recoveries, are free from pain, and have had no return of other symptoms.

#### Study of Series of Gallbladder Cases

DR EDMUND ANDREWS, Chicago. A study was made of sixty-one cases of gallbladder disease, including serial sections of the gallbladder, quantitative and qualitative bacteriologic studies of the gallbladder and gallbladder wall, and chemical studies of the bile. Certain deductions may be drawn from these data which correspond with previous experimental work. Infection seems to reach the gallbladder from the outside and not from the bile. The organisms found were the general flora of the liver and were generally in small numbers. The gallbladder wall contains many more bacteria than the bile, which is often sterile when the wall is infected. Chronic cases of closed gallbladder tend to be sterile, and acutely obstructed gallbladders are more frequently infected. The colon bacillus was the only organism found in large numbers and it seemed to account for all the deaths and most of the postoperative complications. Sections of the gallbladder wall indicate that the greatest degree of infection was present in the outer layers. The closed gallbladder absorbs bile salts very rapidly, thus bringing about crystallization of the cholesterol. The closed gallbladder absorbs cholesterol very slowly. There is no secretion of cholesterol in the gallbladder, as in all cases the total cholesterol in the gallbladder is less in disease than in health. The sediment of the bile contains a minimum of stone-forming substances. The cholesterol and calcium seem to be deposited on nuclei or stones and are not found in large amounts in the sediment. This fact militates against any ideas that stones are formed by agglomeration of sediment. Calcium is absorbed from the acutely infected gallbladder but is secreted in considerable amounts over long periods from the sterile closed gallbladder. This accounts for the calcium deposition on cholesterol stone and the calcium carbonate stone.

#### Presidential Address Congenital Clefts of the Face and Jaw, Operative Technique

DR HARRY P. RITCHIE, St. Paul. In 350 cases of harelip and cleft palate, the total number of operations was 567, that is, some procedure or combination of procedures which required an anesthetic. The mortality was five cases, or 1.4 per cent of the total number. The causes of death were pneumonia, two, erysipelas, one, suffocation, one, undetermined, one. I believe that this is a very fair report on deaths, when all the factors and the class of patients is considered. I believe it due in part, first, to the fact that each case is checked by a pediatrician before operation and, secondly, to the fact that bleeding from one operative step is controlled before another is undertaken. The plan of the classification of Davis and Ritchie is followed in checking the operative results. Therefore the lip, process, hard palate and soft palate are considered separately in the effort to determine the more frequent points of failure and again of success. The lip cases numbered 296, or 84.5 per cent of the total. Failure or unsatisfactory results occurred in forty-seven cases, or about 16 per cent. The operations done include practically all the procedures in the literature, but most of them were repaired on a principle suggested several years ago and called "a muscle theory repair of the lip." The incidence of the process cleft was 258 cases, or 73 per cent. Wiring was done in seventy-one cases, or 27.5 per cent of the 258 cases. My experience with the wires has varied, ranging from beautiful closures to those in which the bones were moved out of position with apparently irreparable damage. The uncertainty of the effect of the wires in a given case has led me to consider every method that will exclude their use. The incidence of the hard palate cases was 272 or 78 per cent of the total number. In all, these operations numbered 199 of the 272. This disparity in totals is explained in part by the fact that more recently the hard and soft palate operations are being postponed to a later date and seasonal selection of time of operation is being more carefully considered. The primary failures were sixty-five cases, or 32.7 per cent of the number of cases in which operation was performed. There is no suture line in the body in which the expectation of a primary union is so poor as in the hard palate.

Of the secondary repairs, however, forty-four were successful, with seven secondary failures. The principle of operation has been the Langenbeck-Warren sliding flap, with medial suture. My experience is valid support to all those who criticize the Langenbeck-Warren operation and who substitute other procedures. In spite of this, I believe that the Langenbeck-Warren principle is correct for three reasons. From the study of the embryology it meets the requirements of a normal palate, when union takes place, the result is a normal palate, there is a high percentage of success in all secondary repairs. The incidence of soft palate cases was 278, or 79.4 per cent of the total number of cases. In the survey there were only six cases in which the cleft was limited to the soft palate entirely. The total number of operations done was 207. The number of failures was seven, or 3.6 per cent. When one considers the factors inimical to a primary result, it would seem that 97 per cent of success indicates that the principles and procedures for the repair of this cleft approaches solution. The survey indicates that the most satisfactory part of the operative work is on the soft palate and in the body of the lip. The most uncertain part for primary and satisfactory results is in the hard palate and in the nostril of the unilateral lip case, but with attention to details there seems to be some hope for the future. The most debatable step is the use of direct force through the medium of wires for the closure of the alveolar process cleft. The report is made with belief that there still are many problems that await the touch of a master hand.

#### The Treatment of Pulmonary Abscess

DR CARL A. HEDBLUM, Chicago. The incidence of pulmonary abscess seems to have risen steadily during the last three decades. In 1900 there were perhaps 300 reported cases, in 1931 there were upward of 3,000. This is doubtless in part due to improved diagnostic methods, but there can be no doubt that there has been an increased incidence of postoperative abscesses. In a series of 2,458 from the world's literature, 657 (26.7 per cent) followed operation. In this country this group constitutes from one third to two thirds of the total number. A consideration of etiology lies beyond the limits set for this paper. However, it may be in order to state that accumulating evidence points to aspiration of virulent organisms from infected tonsils, pyorrhea alveolaris and infected sinuses, with associated temporary partial bronchial plugging as the most common cause. The obvious preventive measures are preoperative oral hygiene, avoidance of operation in the presence of acute infection of the upper respiratory tract, prevention of aspiration by light anesthesia—local or general—gravity drainage into the mouth during tonsillectomy under general anesthesia, suction, and so on. The smaller proportion of embolic abscesses may be prevented in part, perhaps by strict asepsis, by avoidance of operative trauma and by clean-cut ligation of vessels. Among the methods of treatment now recommended may be mentioned prolonged bed rest, thirst cure, postural drainage, vaccines, drug therapy, bronchoscopy, pulmonary collapse, thoracotomy drainage, cautery, extirpation and lobectomy. The evil lies not in the multiplicity of methods of treatment as such but in the tendency to indiscriminate, injudicious and persistent use of one favorite method in all types of cases. Pulmonary abscess varies extraordinarily as to infection, resistance, pathologic anatomy, size, position and contents of a cavity, the size of the communicating stoma and the inflammatory changes in its walls, in the bronchi and surrounding lung. Treatment, to be rational, must take these factors into account. The fundamental principle of treatment is adequate drainage—through a bronchus or through the chest wall. Bronchial drainage results in a spontaneous cure in perhaps 10 to 15 per cent of the acute mild cases. It may be much facilitated by posture. Bronchoscopic enlargement of the stoma between the cavity and the bronchus may make postural drainage more effective. Bronchoscopy is invaluable in the early removal of an etiologic foreign body. Bronchoscopic suction and lavage may further facilitate drainage but it has been pointed out that the percentage of cures from it is no higher than from simple postural drainage. Drainage through the bronchus of central abscess may be facilitated by collapse procedures such as pneumothorax, phrenic neurectomy or thoracoplasty, but the drainage tract of peripheral

cavities may be distorted and obstructed by such procedures. Pneumothorax collapse, furthermore, may result in rupture or spontaneous perforation of the abscess into the free pleural cavity. The mortality from the empyema that follows is very high. External drainage of the abscess may become urgent, and this cannot be safely accomplished until the lung has become adherent after reexpansion, and during that time the patient may have succumbed. Phrenic neurectomy, in my opinion, has a very limited field of usefulness, being indicated chiefly to control hemorrhage and perhaps for collapse of basal cavities that have good bronchial drainage. Extensive thoracoplasty has no indication as a primary drainage treatment of solitary abscess. The consensus seems to be that thoracotomy drainage should be instituted if bronchial drainage promoted by posture and by bronchoscopy fails after two or three months' trial. A more reasonable rule is to establish such a time limit for cases that are more or less stationary but to operate without delay as soon as an abscess cavity has formed in case of very ill patients and those who are getting progressively worse, particularly if the abscess is of the gangrenous type characterized by incessant cough with foul sputum, septic temperature, profuse sweating and prostration. For such patients, thoracotomy drainage is practically the only hope.

The generally accepted time limit for unsuccessful nonoperative treatment of acute abscess is from two to three months. But a large proportion of the abscesses when first seen by the surgeon have been present for many months or years. Such chronicity means extension of the cavity, thickening of its walls, often secondary bronchiectasis, large bronchial fistulas, myocardial damage, nephritis, arthritis, anemia and general debility. Adequate thoracotomy is then more difficult, the hazard of air embolus, metastatic abscess, septic pneumonia and hemorrhage is increased, convalescence is prolonged and secondary plastic operations are often necessary to collapse the stiff walled cavities, bronchiectatic dilatations and fistulas. The mortality is increased not from the operation but from the delay in performing it. The first step in thoracotomy drainage is accurate localization of the cavity, and for this the physical examination and the roentgenogram usually suffice. The second is safeguarding against infection of the pleural cavity by drainage only through adhesions. The presence or absence of such adhesions is determined by exploratory intercostal extrapleural thoracotomy. Thoracotomy drainage should be done only through pleural adhesions, and complete drainage should be accomplished by gradual stages if the patient's condition is such that a one or two stage operation involves any considerable risk to the patient's life.

#### Transurethral Prostatectomy by Means of the Resectoscope

DR HERMAN L. KRETSCHMER, Chicago. During the past eighteen months a great deal of interest has been manifested in the nonoperative treatment of various types of prostatic obstruction by means of transurethral resection. The following advantages of this new method over prostatectomy may be mentioned. A shorter period of hospitalization—in a series of 102 consecutive, unselected cases, the average stay in the hospital was nine days. In some of the cases the patients were discharged on the second and third day. This form of treatment can be used in a group of cases that were denied operative treatment, i. e., prostatectomy, because of various contraindications such as angina, coronary occlusion, and broken compensation. Patients will undoubtedly seek relief at a much earlier date than they now do. Its great value in cases of carcinoma of the prostate cannot be questioned. Among the objections that are mentioned are the possibility of recurrence and also the fact that strictures, it is claimed, may follow transurethral resection. These two questions will be answered with the passing of time. The postoperative course in comparison with prostatectomies is very much shorter and the course is a much milder one. Temperature reactions are fewer and the temperature does not rise so high, as a rule, and when present is of shorter duration. Great care must be exercised in selecting cases for this form of treatment and the same preoperative study and preparation of the patient is necessary just as it is in cases for surgery. There were ten cases of carcinoma. The mortality in this series of cases was 3.4 per cent. I believe that the idea that this is a simple office procedure should be discouraged.



## Current Medical Literature

### AMERICAN

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Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Anatomy, Philadelphia

51 269 508 (Nov. 15) 1932

- Development of Pharyngeal Tonsil (Cat) Cell Types B F Kingsbury  
Ithaca N Y —p 269
- Evolution of Pelvic Floor of Primates H O Elftman New York —  
p 307
- Structural Changes When Growth Is Suppressed by Undernourishment  
in Albino Rat C M Jackson Minneapolis —p 347
- Spontaneous Amputation of Human Supernumerary Digits Pedunculated  
Postminimus H Cummins —p 381
- Innervation of Larynx I Innervation of Laryngeal Muscles I  
Jemere —p 417
- Human Congenital Auricular and Juxta Auricular Fossae Sinuses and  
Scars (Including So-called Aural and Auricular Fistulae) and Bear-  
ing of Their Anatomy on Theories of Their Genesis E D Congdon,  
S Rowhanavongse and P Varanusara Bangkok Siam —p 439
- Development of Human Ovary from Birth to Sexual Maturity C S  
Simkins —p 465

#### American Journal of Medical Sciences, Philadelphia

184 597 752 (Nov.) 1932

- Social Incidence of Rheumatic Heart Disease Statistical Study in Yale  
University Students J R Paul and P A Ieddy New Haven Conn  
—p 597
- \*Immediate Causes of Death in Cancer S Warren Boston —p 610
- Oxygen Therapy Critical Resume W H Potts Jr Dallas Texas  
—p 616
- Lisozyme in Saliva N Kopeloff M M Harris and Barbara McGinn  
New York —p 632
- Study of Iron Volume Index of Blood and Its Significance in Treat-  
ment of Anemia C Reich and Vera C Tiedemann New York —  
p 637
- \*Clinical Value of Uncorrected Color Index and of Cell Size in Perni-  
cious Anemia S M Goldhamer with technical assistance of A  
Iritzell E Davul on and C Steen Ann Arbor Mich —p 645
- Studies of Anemia in Pregnancy I Gastric Secretion in Pregnancy  
and Puerperium M B Strauss and W B Castle Boston —p 655
- Id Relationship of Dietary Deficiency and Gastric Secretion to Blood  
Formation During Pregnancy M B Strauss and W B Castle  
Boston —p 663
- Occurrence of Sicklelema in White Race S Rosenfeld and I B Pincus  
Brooklyn —p 674
- Basal Metabolism in Pernicious Anemia and Subacute Combined Degen-  
eration of Spinal Cord M M Suzman Boston —p 682
- Differentiation of Lymphatic Leukemia from Agranulocytic Angina  
H A Rothrock Jr Bethlehem Pa —p 689
- Diseases of Lymphoid and Myeloid Tissues V Coexistence of Tuber-  
culosis Hodgkin's Disease and Other Forms of Malignant Lymphoma  
F Parker Jr H Jackson Jr J M Bethea and F Otis Boston  
—p 694
- \*Valuable Sign in Differential Diagnosis of Acute Abdominal Malaria  
K P A Taylor Havana Cuba —p 699
- Pathogenesis of Myocardial Fibrosis (Chronic Fibrous Myocarditis)  
Madeline R Brown Boston —p 707
- Gallbladder Infection and Arthritis F F Hartung and O Steinbrocker  
New York —p 711
- Cardiac Therapy in Amyloidosis A David H Johnston and I I  
Stanley San Francisco —p 716

**Causes of Death in Cancer**—Warren studied the immediate cause of death in 500 cases of carcinoma. He found that cachexia is the most frequent single cause although it is exceeded by the total of the various pulmonary disorders. Cachexia is associated most frequently with cancer of the breast stomach and large intestine. The commonest cause of death in carcinoma of the cervix uteri is renal insufficiency. Sepsis is an unimportant factor in fatal cases. The striking association of carcinoma of the buccal mucosa with pneumonia (52 per cent) and with lung abscess (56.3 per cent) emphasizes the importance of aspiration in the production of these lesions.

**Color Index and Cell Size in Pernicious Anemia**—Goldhamer states that the uncorrected color index represents the actual hemoglobin per cent reading (100 per cent is normal) over the percentage of red blood cells (5,000,000 being

equivalent to 100 per cent), disregarding such factors as sex and the various hemoglobin standards. Because of the wide range of normal red blood cell counts, 5,000,000 cells per cubic millimeter may be used as an average arbitrary standard. From 14 to 16 Gm of hemoglobin per hundred cubic centimeters of blood is suggested as a standard of normal. The average and serial color indexes in uncomplicated cases of pernicious anemia are above 1 before treatment, those of the male series are higher than those of the female. Regardless of the type of effective treatment, the influence on the color index is the same, the average and serial color indexes remain above 1 for about six weeks after treatment is started and then become less than 1. In untreated and uncomplicated cases, the lower the initial red blood cell count the higher the average color index. As the red cell count approaches the arbitrary normal following adequate treatment, the color index tends to approximate unity. Within the range of from 4,000,000 to 5,000,000 red blood cells per cubic millimeter, a level is reached at which the color index becomes 1 or less. A single color index determination is not always diagnostic in cases of pernicious anemia, as individual readings may be above or below 1, but during relapse the average color index is always above 1 unless some complication is present. The color index may be influenced by such complications as hemorrhage, chronic infections glandular dystrophies and food deficiencies. The increase in the percentage of red blood cells larger than 7.5 microns in early relapse, regardless of the severity of the anemia, may be used as a factor differentiating pernicious anemia from secondary anemia. In untreated cases of pernicious anemia a high color index is always associated with a marked increase in the percentage of cells larger than 7.5 microns. The presence of increased numbers of large cells in a blood film, regardless of the red blood cell count is one of the earliest and most constant observations of the blood in a beginning relapse of pernicious anemia.

**Sicklelema in White Race**—Rosenfeld and Pincus state that a review of the literature of sickle cell anemia in the white race reveals only one previous case in which no evidence of a possible admixture of Negro blood can be discovered. A second case is cited in which the data are incomplete for such a conclusion. The authors report a third case in a family in which three generations show the sickling trait and at least five generations are known to be of the white race from a region where Negroes are practically unknown. The ethnologic and clinical features of the subject are discussed by the authors. They conclude that in the future more cases of sickle cell anemia in white persons will be discovered. The reasons for this statement are as follows. First since attention has been called to the occurrence of the sickling trait in the white race, more frequent examinations of the blood for sickle cells will be made especially in those patients presenting the syndrome of an atypical hemolytic icterus. Thus more cases of the type described by the authors may be discovered. Second, since it is known that the sickling trait is a dominant character in its hereditary transmission and since interbreeding between the Negro and the white races is more or less constantly taking place in many regions including this country one may in the future generations expect the presence of this peculiar blood trait in an increasing number of apparently white descendants. Because of the tendency to deny such descent no history will be obtained of such racial origin in affected individuals, thereby increasing the number of apparently pure white cases of sickle cell anemia.

**Basal Metabolism in Pernicious Anemia**—The basal metabolic rates of sixty-five cases of pernicious anemia without and sixty-five cases with, subacute combined degeneration of the spinal cord have been studied by Suzman. In pernicious anemia without spinal cord degeneration, the basal metabolism tends to be either normal or elevated (41.5 per cent of the cases presented a basal metabolic rate of over plus 10 per cent), but in pernicious anemia with subacute combined degeneration there is a distinct tendency for diminution to occur (43.1 per cent presented a basal metabolic rate below minus 9 per cent). The basal metabolism is influenced by the level of the red blood cells. In the cases showing subacute combined degeneration the red blood cell counts were on the whole higher than in the group of patients with uncomplicated pernicious anemia. The data show, however, that the tendency for dimi-



reported cases, of which they summarize 62 in tabular form. In reviewing the 256 cases, they found the tumor to occur usually before the age of 20 years (79 per cent) and almost always before 30 years (94 per cent). The etiology has not been definitely established, however, a congenital factor has appeared to be of considerable importance, while there may have been a traumatic element in 17 per cent of the cases. The cardinal symptoms were a mass which grew slowly and was localized in a muscle or group of muscles, usually with normal overlying skin, pain, which was present at some time in the course of the disease (58 per cent), tenderness (29 per cent), and deformity or functional impairment, which was present in about a fourth of the cases. The correct diagnosis was seldom made before operation. The accuracy of the diagnosis was aided by aspiration of blood from the tumor and by the presence of phleboliths in the roentgen examination. The lesion was most often confused with lipoma, sarcoma or cold abscess. The treatment of the condition was practically always surgical excision, which was sometimes technically difficult because of hemorrhage. The tumor occurred most frequently in the extremities, especially the thighs. The quadriceps femoris was the most frequently involved muscle. Grossly it was found to be diffuse most frequently, although some were circumscribed or partially circumscribed. Microscopically it was found usually to have a cavernous structure, although frequently arterioles, veins and capillaries were present and were sometimes the predominating structure. Definite proliferative changes were observed in the endothelium of the vessels and in the supporting tissue in a considerable number of the cases. The prognosis for life is excellent, as there were no deaths reported from the disease or the surgical treatment. Disability following operation was infrequent, and recurrence almost equally rare.

**Hernia in Infant**—In 906 consecutive hospital patients twenty hernias were found by Blevins before these children reached the age of 42 months. In addition to these twenty hernias he observed eleven others within this age range which he briefly reviews. Twenty-six of these children were operated on by radical herniorrhaphy without any mortality and without recurrence in any case. The author believes that all inguinal and femoral hernias persisting over a period of one month should be referred to a surgeon for hernioplasty. If incarceration is noted at any time, immediate operation should be performed, as strangulation might intervene by reason of torsion. A truss is not to be used in any event as the danger attendant on its usage greatly outweighs the advantages that are occasionally derived from it. The true congenital umbilical hernia with abdominal contents in the sac should be referred to the surgeon for operation a few days after birth. The enlarged umbilical ring which protrudes when the child cries should be treated conservatively through the application of a gauze pad held by adhesive plaster. In the event that the ring does not close at the end of six months, the child should be referred for operative procedure. The large hernia in the cretin which is probably more aptly described as a complete separation of the recti, is not a surgical condition and all treatment should be directed against the primary etiologic factor through the use of thyroid extract.

### Virginia Medical Monthly, Richmond

59 385 446 (Oct.) 1932

- Why Is the State of Virginia Interested in Mental Hygiene? W. F. Drewry, Richmond—p. 385  
Status of the Feeble Minded and Epileptic in Virginia J. H. Bell, Colony—p. 387  
How Physical Handicaps Produce Mental Problems T. H. Redwood, Norfolk—p. 389  
Value of Extract of Watermelon Seed in Treatment of Arterial Hypertension B. P. Seward, Roanoke—p. 391  
Dietetics in Dentistry and Its Relation to Medicine F. R. Talley, Petersburg—p. 398  
Mechanism, Diagnosis and Management of Occipitoposterior Positions of Vertex R. A. Ross, Durham N. C.—p. 407  
Control of Typhoid Fever in Virginia R. K. Flannagan, Richmond—p. 408  
Rational View of Eczema I. W. Lord, Baltimore—p. 412  
Evaluation of Radiation Therapy in Advanced Cancer C. W. Eley, Norfolk—p. 415  
Mastomycosis F. W. Shaw and B. W. Meador, Richmond—p. 419  
Practical Value of Information Concerning Cerebrospinal Fluid A. Gordon, Philadelphia—p. 421  
Use of Anterior Pituitary Substance in Common Baldness Preliminary Report T. Kohn, Richmond—p. 425

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### Archives of Disease in Childhood, London

7 235 289 (Oct.) 1932

- Case of Hemorrhagic Nephritis in a New Born Baby C. P. Lippage—p. 235  
\*Experimental Study of Antirachitic Factor in Human and Animal Milks I. A. Sabri and M. M. Fikry—p. 239  
Position of Large Intestine in Infants and Its Relation to Constipation A. K. A. Khalik, H. Erfan and A. Askar—p. 249  
Specificity of Hemoglobins Including Embryonic Hemoglobin Hilda Trought—p. 259  
Vincent's Infection in Childhood C. E. Kellett—p. 263  
Use of Radiostoleum and Calcium Salts in Rheumatism E. C. Warner—p. 273  
Sinusitis in Childhood Valentina P. Wasson—p. 277  
Tuberculous Laryngitis in Children C. D. S. Agassiz—p. 287

**Antirachitic Factor in Milk**—According to the experiments of Sabri and Fikry on rats, the results of their experiments agree with those of most other workers that milk, whatever its source, does not contain vitamin D in sufficient amounts to be of practical value in the prevention of rickets. In addition, it has been shown by various workers that irradiation of the milk endows it with antirachitic power. The authors came to a similar conclusion on irradiating milk fat itself. Thus, the child is evidently receiving in his milk supply sufficient amounts of the precursor of vitamin D (or provitamin), which will acquire antirachitic properties when irradiated by exposure of the child to sunlight or ultraviolet rays. It has been shown also that rachitic children are probably receiving a smaller amount of provitamin in their milk supply. The clinical difference between human and cow's milk in their antirachitic power, which has been stated by various authors, cannot be due to any difference in their vitamin D or provitamin content, as the two are present in nearly the same amounts in both milks. It must be ascribed to other factors.

### British Journal of Tuberculosis, London

26 159 216 (Oct.) 1932

- Tuberculosis and Temperament K. H. R. Edwards—p. 172  
Treatment of Pulmonary Tuberculosis by Light Phases of Controversy E. A. Underwood—p. 178  
\*Use of Insulin in Treatment of Pulmonary Tuberculosis P. Ellman—p. 187  
The Problem of the Advanced Tuberculous Patient F. Heaf—p. 190

**Insulin in Treatment of Pulmonary Tuberculosis**—Ellman outlines the value of insulin as a therapeutic measure in certain selected cases of phthisis to restore normal appetite and combat loss of weight and resistance. It is especially indicated in afebrile, inactive cases of phthisis, when failure to gain weight in a previously robust person persists despite the usual therapeutic measures. No treatment should be undertaken without clinical, radiologic and bacteriologic control. Observations of weight, pulse, blood pressure and temperature should be made when using insulin. Insulin is contraindicated in cases of fever, active disease, hemoptysis, marked hypotension and severe reactions following injections. The author commences treatment with a hypodermic injection of 5 units of insulin twenty minutes before the principal meal. To avoid any risk of hypoglycemia patients should be advised to drink a glass of milk, or take dextrose, and to carry a few lumps of sugar with them, and should they develop any symptoms of hypoglycemia, such as general weakness, listlessness, shakiness, palpitating nervousness, giddiness or sweating, to take a lump of sugar. The injection of 5 units of insulin should be continued daily for the first week. This is increased by 5 units weekly until 30 units is taken as a daily dose for from one to three weeks. The author never exceeds the 30 unit dose.

### East African Medical Journal, Nairobi

9 151 182 (Sept.) 1932

- Preliminary Observations on Etiology of Kenya Typhus H. D. Tonking—p. 152  
Comparison of Abilities of Races, with Especial Reference to East Africa R. A. C. Oliver—p. 160

9 183 214 (Oct.) 1932

- Comparison of Abilities of Races with Especial Reference to East Africa R. A. C. Oliver—p. 193  
Case of Cardiac Massage C. A. Brainbridge—p. 205

**Glasgow Medical Journal**

27 217 288 (Oct.) 1932

- Spinal Anesthesia in Obstetrics and Gynecology D Baird—p 217  
Spinal Anesthesia with Percaïne H P Fairlie—p 225  
Use of Regional Anesthesia. D Lamont—p 233  
Tuberculosis in Infancy and Childhood J W S Blacklock—p 241  
Notes on Tropical Diseases Sometimes Seen in Home Practice. R. Aird—p 254

**Journal of Anatomy, London**

67 1 213 (Oct.) 1932

- Chromosomes of *Sphenodon Punctatum*. R. D Keenan—p 1  
Distribution of Sympathetic Fibers in Extremities H H Woollard and R Phillips—p 18  
Human Pineal Gland and Pineal Cysts Eugenia R A. Cooper—p 28  
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Cavum Septi Pellucidi. I M Thompson—p 59  
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Abdominal Pregnancy in Animals, with Account of Case of Multiple Ectopic Gestation in Rabbit. Nellie B Eales—p 108  
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Unusual Form of Brachyphalangy and Syndactyly, with Double Proximal Phalanx in Middle Fingers E A. Cockayne—p 165  
Case of Enlarged Parietal Foramina Associated with Metopism and Irregular Synostosis of the Coronal Suture. J A Stallworthy—p 168

**Journal Obst. and Gynec. of Brit. Empire, Manchester**

39 471 742 (Autumn) 1932

- Description of Human Ovum Fifteen Days Old with Especial Reference to Vascular Arrangements and to Morphology of Trophoblast. N M Falkner—p 471  
\*Clinical Observations on Antitubercular Vaccination of the New Born Child with Bacillus Calmette (Guérin) P Bar—p 507  
Method of Rapid Diagnosis of Pathologic Specimens A J Wrigley—p 527  
Causation of Onset of Labor A Suggested Theory R A Gibbons—p 539  
Pregnancy in Association with Cardiospasm F Roques—p 550  
\*Gastric Acidity in Emesis and Hyperemesis Gravidarum D F Anderson—p 558  
Adenocarcinoma of Vagina G I Strachan—p 566  
Dystocia Dyspitiurism. E A Daniels—p 573  
Ovarian Carcinoma Case. J C. Gupta—p 580  
Acquired Atresia of Genital Tract Note of Cases R. E Tottenham—p 587  
Hemimelus Case. S Silverman—p 591  
Adenomyoma of Uterus with Tuberculous Infection D M Vaux—p 594  
Posterior Pituitary Gland in Pregnancy R C. Brown—p 596  
Pyemia Following Acute Infective Periostitis of Pubes in a Case of Miscarriage. J B Cleland—p 599  
Treatment of Varicose Veins During Pregnancy R. Greene—p 601  
Case of Twin Labor in Lion Marmoset W L English—p 603

**Antituberculosis Vaccination of the New-Born**—Bar has explored at length the problems which should present themselves to the obstetrician asked to vaccinate a child with BCG. Few of these problems have been finally settled, but in studying them the obstetrician should not ignore the results already obtained. The method is harmless, thousands of vaccinations done in France and elsewhere without a single accident, both on healthy and hereditarily tuberculous children, prove this. Many years of research are necessary to assess the degree of its efficacy. One can say with certainty today that the measure of success depends on the rigor with which isolation, until immunity has been acquired, is carried out and heavy infections avoided.

**Gastric Acidity**—Of twenty-eight patients with emesis gravidarum, Anderson found that six had achlorhydria. Of twenty-two patients with hyperemesis gravidarum, ten had achlorhydria while hyperchlorhydria was present in three. The remainder showed varying degrees of free acid but had not been examined during the period of active vomiting. A group of twenty-eight patients, comprising cases of pyelitis, albuminuria and eclampsia, were examined in respect of their gastric acidity. Patients with pyelitis associated with vomiting exhibited a tendency to hypochlorhydria, but none had achlorhydria. There was no marked incidence of achlorhydria in albuminuria or eclampsia. The incidence of achlorhydria in the total series of seventy-eight cases was 24 per cent. Grouping the cases of emesis and hyperemesis gravidarum (fifty cases), achlorhydria occurred in 32 per cent of them. Approximately 33 per cent of the cases of achlorhydria occurred between the ages of 19 to 25 and 84 per cent between the ages of 19 and 30.

**Lancet, London**

2 771 822 (Oct 8) 1932

- Present Position of Sympathectomy E D Telford—p 771  
\*Treatment of Burns in Outpatients with Reinforced Tannic Acid Dressings J H Hunt and P G Scott—p 774  
Etiology of Breast Cancer C C Twort and A C Bottomley—p 776  
Treatment of Pernicious Anemia by Marmite A Goodall—p 781  
Conservative Treatment of Eclampsia Report of One Hundred Cases E A Gerrard and R L Newton—p 782  
Physiology of Proteinuria and Its Clinical Significance Phyllis M Tookey Kerridge and L E Bayliss—p 785

**Tannic Acid Dressings for Burns**—Hunt and Scott offer a series of sixty-three consecutive cases in which a modification of the recognized tannic acid method has been used for the outpatient treatment of burns and scalds. If the crust formed by the recognized method is covered with a dressing and bandage, it tends to soften and become septic and detached. This difficulty has been overcome by reinforcement of the crust, with a thin layer of gauze, gauze and collodion, or collodion alone. The results have been encouraging, especially in burns of the face and hands, which often give so much trouble. Details of the three methods are given. In the majority of second and third degree burns the method of choice is to paint the burned area with a 5 per cent solution of tannic acid in water and to apply a dressing soaked in the same solution. The tannic acid solution is applied with a soft camel's hair brush (3/4 inch wide) instead of a spray. No anesthetic is required. Next day when the dressing is removed the burn will be found covered with a thin brown crust, and the dressing is repeated. On the third and fourth day this crust is reinforced with collodion. The surface then remains hard and dry and the crust separates toward the end of the second week, exposing the new epithelium which has grown beneath it. For the first-aid treatment of all burns and scalds the authors use dressings soaked in a 5 per cent solution of tannic acid in water (20 grains [1.3 Gm] of the powder to an ounce of warm water). Vigorous cleaning and scrubbing are avoided. Softening of an ordinary tannic acid crust, when covered up, is usually thought to be due to diminished evaporation from its surface. Their series of cases suggests that evaporation plays but little part and that the softening is nearly always due to sepsis following mechanical damage, from the rubbing of a dressing. The effect of reinforcement is entirely mechanical. The strengthening is most essential at the edge of the crust where it is in contact with the skin and its organisms, here it is that separation first occurs from the friction of dressings and organisms first gaining a hold. The agents used for reinforcing the crust all help to prevent this separation at the edge and it is to this that the beneficial effect of reinforcement is due.

**"Gann," Japanese J Cancer Research, Tokyo**

28 253 314 (Sept.) 1932

- Case of Chancroid Developing on Wall of Old Fistulous Osteomyelitic Bone Cavity D Yamaguchi—p 253

**Japanese Journal of Obstetrics and Gynecology, Kyoto**

15 264-340 (Aug.) 1932

- Pharmacologic Investigation of Blood Vessels of Human Placenta K. Ueda—p 264  
Investigation of Placental Ferments in Various Stages of Pregnancy M. Abe—p 284  
Supplementary Study on Permeability of Carbohydrate in Human Placenta M. Abe—p 289  
Physicochemical Change of Blood in Gynecologic Diseases Part II Physicochemical Nature of Blood of Patients with Uterine Myoma and Ovarian Cyst M. Ikeda—p 291  
Electric Impulse to Rabbit Uterus Hypophysis of Which Is Completely Destroyed. H. Morimoto and M. Ikeda—p 300  
Biologic Study of Radiosensitivity J. Nakagawa—p 304

**Journal of Oriental Medicine, South Manchuria**

17 17 32 (Sept.) 1932

- Intestinal Amoebiasis K. Hiyeda—p 17  
Experimental Study on Persistence of *Spirochaeta Recurrentis* in Brain H. Hiroki—p 21  
Clinical and Experimental Studies on Sodium Thiosulphate Solution as Solvent for Arspenamine T. Iwakiri—p 25  
Dorsal Musculature of Foot in the Chinese Y. Liu—p 26  
Occurrence of Sternalis Muscle in the Chinese T. Sakuma—p 28  
Cysticercus Cellulosus Hominis Two Cases K. Kato—p 29  
Seroreaction in Treatment of Syphilis M. Ehara—p 29  
Miasmatic Spreading and Prevention of Malaria in Manchuria S. N. Ishihori—p 30

## Annales de Médecine, Paris

32 289 384 (Nov.) 1932

- Chronic Deforming Arthropathies in Course of Bronchial Dilatation  
L. Bernard and M. Lamy —p 289
- Malignant Fatal Diphtheria Importance of Renal Lesion and Azotemia  
J. Chafier, Lévrat, Froment and Roman Monnier —p 304
- \*Case of Urticaria from Cold Biologic Study R. J. Weissenbach and  
J. P. Brisset —p 333
- \*Lesions of Bundle of His Tawara I. Mahaim —p 347
- Familial Primary Hypoplasia of Superior Maxilla M. Villaret and  
H. Desoille —p 378

**Urticaria from Cold**—Weissenbach and Brisset report a case of urticaria from cold in a woman, aged 32. Following the first attack, which occurred at the age of 21, after an exposure to cold, the eruptions appeared with progressively increasing frequency and intensity. After a sojourn of fifteen minutes in a cool atmosphere, an intense pruritus was felt in the cooled parts of the body, followed by the appearance of an eruption, which lasted till about one hour after return to a moderate temperature. It was found experimentally that chilling produced a typical hemoclastic crisis, which reached its maximum in about fifteen minutes, preceding by a few minutes the appearance of the eruption. This led the authors to believe that this case belonged to the group of cases of urticaria from cold due to a reaction of shock. This opinion was supported by the fact that no vasomotor stimuli other than cold produced the urticaria, that the urticaria did not appear if the cutaneous surface which was cooled was small, and above all by a positive Prausnitz-Kustner reaction. The latter means that injection of the patient's serum (taken during exposure to cold) into the skin of healthy individuals results in the production of urticaria when the injected area is cooled. The authors offer the hypothesis that cold provokes the formation of an antigen, which in normal persons is destroyed or assimilated so that no antibody is produced and no urticaria results. In the patient, this antigen is not destroyed or assimilated and stimulates the formation of antibody. The antigen-antibody conflict manifests itself during renewed exposure to cold by appearance of the urticaria. The authors think that the substance produced or liberated by the antibody-antigen conflict is similar to histamine. The vasomotor phenomena caused by the cold and produced at the same time as the shock determine the localization of the urticaria. All therapeutic measures used, including medication affecting the vasomotor system, serotherapy, injections of histamine and habituation to cold, were without results.

**Lesions of Bundle of His-Tawara**—In a serial examination of the heart of a patient who had suffered from myocarditis and whose electrocardiogram had shown the deformities of the ventricular complex considered typical of arborization block, Mahaim found lesions completely interrupting both branches of the bundle of His. He also found intact septal connections between the posterior ramifications of the left branch of the bundle of His at their source and the ventricular myocardium of the septum. These septal connections have been seen by the author in many cases. He is of the opinion that, if these connections are constant in man and are always located at the source of the left branch, they offer a new explanation for the mechanism of so-called arborization block. The latter does not correspond to lesions of the arborization terminals but to lesions completely interrupting both branches. He calls the new pathologic combination "missed bilateral block" because there is a complete block at the level of the specific tissue, by section of both branches, without the occurrence of auriculo-ventricular block. (This was true of the case reported.) The wave of excitation, unable to use the path of the specific fibers, travels over the septal connections of the left branch and descends the ventricular myocardium of the septum. The slowness of the conductivity of the ventricular myocardium compared to the conductivity of the specific fibers of the bundle is translated by the enlargement of the QS interval of the electrocardiogram, typical of the so-called arborization block. These septal connections of the left branch also explain the paradoxical cases of bundle branch block described by Oppenheimer and Pardee and by B. and E. Oppenheimer, in which complete lesion of the left branch corresponds to an electrical ventricular complex with left ventricular preponderance. They also permit explanation of all degrees of enlargement of the QRS complex seen in clinical electrocardiograms.

## Archives d'Électricité Médicale, Paris

40 249 296 (July) 1932

- Dielectrolysis G. Bourguignon —p 249
- \*New Sign of Death Diathermic Test H. Bordier —p 273
- Results of Radium Therapy of Cancers of Cervix Uteri (1921-1931)  
F. Delporte, J. Cahen and F. Sluys —p 275
- Radiologic Properties of Latent Tissues J. Firlet and J. Lambert  
—p 281
- Fight Against Cancer in Belgium Mainin —p 286
- Roentgenography and Stereoroentgenography of Thorax by Means of  
Cardiorespiratory Selector P. Cottenot —p 291

**New Sign of Death Diathermic Test**—Bordier describes a new method of distinguishing between real and apparent death. A diathermic current of from 1,500 to 2,000 milliamperes is applied to one part of the body, for example, the abdomen and the lumbar region. Just before the current is applied, the temperature at some point distant from the electrodes, as, for example, the mouth or the axilla, is measured. If, after the current has been applied for twenty or thirty minutes, there is no rise in the buccal or axillary temperature, death may be affirmed. If, on the other hand, there is a rise in the axillary or buccal temperature, no matter how slight, it signifies that the circulation is not completely arrested, though the rhythm may be imperceptible, and that death is only apparent and not real. The thermal elevation is due to the heating of the blood and circulating fluids during their passage through the tissues situated between the electrodes. When death is recent and the body has not reached a thermal equilibrium with the surrounding medium, the temperature decreases in spite of the passage of the high frequency current. The author thinks that this test, in addition to its valuable property of demonstrating the persistence of the circulation, no matter how slight it may be, offers a means of reviving persons whose circulation scarcely exists and of preventing that condition from ending in real death. The diathermic current, by means of the intense hyperemia and the heat produced in the tissues, can progressively reestablish a more active circulation and revive the cardiac contractions.

## Policlinico, Rome

39 1645 1684 (Oct. 24) 1932 Practical Section

- Clinical Aspects of Wandering Erysipelas R. Grasso —p 1645
- \*Technic of Concentration of Tubercle Bacilli in Sputum of Patients  
with Tuberculosis E. Nassi —p 1649
- Supernumerary Bone in Tendon of Quadriceps Case A. Caputi —  
p 1652
- Pseudo-Eclampsia Due to Ascariasis in First Days of Puerperium  
A. Bernardini —p 1667

**Concentration of Tubercle Bacilli in Sputum**—Nassi describes his method of isolating tubercle bacilli by means of a solution made of 2 Gm. of magnesium hyperchloride, 6 Gm. of sodium bicarbonate and 1,000 cc. of distilled water. An equal amount of sputum and solution are mixed in a receptacle and slowly stirred with a glass rod for about ten minutes and then poured into a large test tube. The tube is gradually heated in a water bath at from 85 to 90 degrees centigrade for about fifteen minutes and the contents are slowly stirred. The mixture is then poured in a sedimentation cup. The most minute particles tend to drop to the bottom. After three hours the sedimentation is complete. The liquid is then poured out and some of the sediment is smeared on a glass slide. The Ziehl-Neelsen staining method is used with the following modifications: for decoloration, a solution of 4 per cent sulphuric acid which gives a faint rose color and for contrast staining, a solution of well diluted methylene blue (methylthionine chloride, U. S. P.). The author describes another method for quick diagnosis. He makes 10 cc. of an aqueous solution of 15 per cent common gelatin, melted by heating and filtered while still hot. The sputum is heated in a water bath for fifteen minutes, when it becomes one homogeneous mass, 5 cc. of it is poured into the gelatin solution and 5 cc. of ligroine is added. The tube is closed with a rubber stopper and is thoroughly shaken for thirty seconds. In a few minutes the ligroine carries the tubercle bacilli to the top and later the bacilli form a sub-stratum between the gelatin solution and the ligroine. After being placed in cold water or on ice, the gelatin solidifies. The ligroine is then poured off and the bacilli are scraped from the top of the gelatin, placed on a slide and stained. The author states in conclusion that he advocates the first method for its simplicity and the second for its rapidity.

## Deutsche medizinische Wochenschrift, Leipzig

58 1669 1708 (Oct. 21) 1932

- Irradiated Ergosterol A Windaus and A Lüttringhaus—p 1669  
Danger of Internal Silver Therapy A. V. Knack—p 1672  
\*Differences in Course of Dextrose Tolerance Test in Three Structural Types O Hirsch—p 1675  
Clinical and Histopathologic Aspects of Electrical Injury S Jellinek—p 1677  
\*Causal Therapy of Ulcer of Stomach by Modification of Hydrogen Ion Concentration E Behrenroth—p 1678  
Technic of Surgical Enucleation of Tonsils in Children in Combination Anesthesia Hopmann—p 1679  
Focal Infection as Cause of General Diseases Handschuh—p 1681  
Observations on Action of Substance from Anterior Lobe of Hypophysis F Pendl—p 1681  
Hessing's Glue Bandage G Schramm—p 1682  
Improvement in Storage and Transportation of Urethral Instruments P von der Porten—p 1683  
Pathogenesis of Diphtherial Circulatory Weakness U Friedemann—p 1683

**Dextrose Tolerance Test in Three Structural Types**—Hirsch made dextrose tolerance tests on nineteen persons of the pyknic type, on twenty of the athletic type and on eighteen of the leptosomatic type. He detected noticeable differences in the blood sugar curves of these three types. In persons of the pyknic type the increase was great, remained for a considerable time at a maximum and decreased slowly to near the values obtaining during fasting. In the athletic type there was likewise a considerable increase, but the decrease was rapid and even went below the normal value. In persons of the leptosomatic type the apex of the curve was lower than in the other two types and usually decreased more rapidly and farther below the fasting value than in athletic persons. The author recommends that this constitutional behavior should be taken into consideration when tolerance tests are evaluated. He assumes that the varying course of the blood sugar curve in the different types may be due to endocrine factors.

**Therapy of Gastric Ulcer by Modification of Hydrogen Ion Concentration**—On the basis of experiences with intravenous injection of calcium in gastric hemorrhages, Behrenroth resorted to intravenous administration of afenil (calcium chloride urea) in patients with gastric ulcer. The injections were made every five days, and case histories show that from eight to ten injections were necessary. In addition to the injections the patients also received the usual dietary treatment, atropine and Carlsbad salt. The injections of afenil did not cause complications, and the only reaction was a slight feeling of warmth during the injections. The general condition, the appetite and the weight of most patients showed a rapid improvement, and in many the hemoglobin values and the erythrocytes also increased. In discussing the mode of action of this treatment, the author points out that its efficacy is probably due to a change in the acid base equilibrium toward the alkalotic side. The superiority of intravenous calcium therapy over the oral calcium therapy is due to the fact that in intravenous injection all the basic calcium ions enter the blood, whereas in oral administration of calcium chloride the salt enters the body as a neutral salt, is eliminated as an alkaline salt and thus leaves acids behind.

## Folia Haematologica, Leipzig

48 145 278 (Oct.) 1932

- Classification of Lymphoid Cells in Lymphoid Celled Angina. J Wajzer—p 145  
Spleen Atrophy with Anemia of Character Resembling Pernicious Anemia Case. G Bigalke—p 157  
Interpretation of Changes Resulting in Anemia Induced by Intravital Dye Trypan Red Experimental Evidence Supporting Monophyletic Theory of the Origin of Blood Cells J S Latta and F H Moore—p 178  
Results of Animal Experiments with Radiothorium II That Is Used in Treatment of Leukemia I Zadek—p 210  
Intracellular Precipitation and Impregnation of Hemoglobin in Erythrocytes J F Knecht—p 231  
Acquired Hemolytic Jaundice in Woman Previously Splenectomized for Central Thrombocytopenia T R Waugh—p 245  
Blood Groups and Diameter of Erythrocytes L. Friedmann and E Tschkonja—p 261

**Changes in Anemia Induced by Injection of Dye**—Latta and Moore present the results of a series of experiments in which different groups of albino rats were subjected to a varying number of intraperitoneal injections of a toxic acid azocolloidal dye trypan red given at twenty-four hour intervals.

Changes in the circulating blood and those in the hematopoietic tissues of the red bone marrow and spleen are given and an attempt is made to correlate these changes. Repeated injections of trypan red brought about a marked and progressive anemia, correlated with a gradual rise in the percentage of reticulocytes and possibly a tendency to a decrease in the color index. A marked neutrophilic leukocytosis was exhibited, which reached its peak between the third and fourth injections, the leukocyte count tending toward normal from that time on. Marked qualitative changes were produced in the leukocyte count, segmented neutrophils underwent a gradual decrease, monocytes increased slightly and lymphocytes decreased in proportion to the increase of neutrophils, so that eventually almost complete reversal of the lymphocyte-granulocyte ratio was attained, an increase in the Schilling index then existing. Initial injections were found to be followed by no change in erythropoiesis, or only a slight depression, and by granuloblastic hyperplasia with the beginning of the formation of macrophages from reticular cells and hemoblasts in situ. With added injections greater emphasis is placed on granulopoiesis and macrophage formation, with this divergence of the stem cells and the depressing effect of the dye greatly embarrassing erythropoiesis. The amount of macrophage formation increased just as the number of injections of the dye increased. The amount of erythrocyte destruction noted in the spleen and bone marrow was in direct proportion to the increase in the number of macrophages in these organs.

**Blood Groups and Diameter of Erythrocytes**—Friedmann and Tschkonja conducted studies to determine whether the diameter of the erythrocytes is influenced by the race, age, sex or blood group of a person. The tests were made on healthy persons, on 100 children and on 100 adults of both sexes, who were either Georgians, Armenians or Russians. Tabular reports indicate that the diameter of the erythrocytes is not influenced by race, sex or age but that every blood group is characterized by a certain size of erythrocytes. The greatest diameter of erythrocytes was observed in the blood group O (717 microns), the smallest in the blood group AB (669 microns).

## Virchows Archiv f path Anat. u. Physiol, Berlin

286 571 865 (Oct. 13) 1932

- Changes in Pulmonary Tissues Produced by Introduction of Colloidal Cholesterol into Blood Stream. G A Merkulow—p 571  
Pathology of Bronchial Asthma W Pagel—p 580  
\*Involvement of Skin in Miliary Tuberculosis P Geipel—p 591  
Hematogenic Infection of Liver of Rabbit by Tubercle Bacilli Toxin of R. J. Anderson H Guillery—p 604  
Culture of Tubercle Bacilli from Blood. H Popper, F Bodart and W Schindler—p 615  
\*Aspects of Generalized Actinomycosis K Fellingner and G Salzer—p 638  
Mycosis Fungoides in Dog with Demonstration of Assumed Pathogenic Agent D Wirth and R. Baumann—p 651  
Morphologic Changes of Human Hypophysis Following Destruction of Base of Mesencephalon or of Infundibulum of Hypophysis E J Kraus—p 656  
Method of Fat Staining of Tissue Cultures Z Szantoch—p 675  
\*Question of Identity of Charcot's and Botcher's Crystals M Bogen—p 690  
Reticulosarcomatosis E Benecke—p 693  
\*Aspects of Reticular Sarcoma of Lymph Nodes and of Other Lymphoid Organs F Roulet—p 702  
Extensive Relapsing Thrombosis of Intestinal Veins in Subacute Sepsis J Catasas and A Symeonidis—p 733  
Chronic Occlusion of Portal Vein H Fleischhauer—p 747  
Blood Vessels of Periosteum in Inflammatory Changes H Naumer—p 766  
Dependence of Cardiac Action on Size of Lumen of Vessels G Hauffe—p 780  
\*What Are Argentaffine Cells? H Hamperl—p 811  
Analysis of Interstitial Cells in Testes in E Avitaminosis A. Juhasz-Schaffer—p 834

**Involvement of Skin in Miliary Tuberculosis**—Geipel observed an involvement of the skin only in nurslings and in young children. The tubercles were found in the corium and in the adjoining portion of the epidermis and also in the deeper layers of the corium. In older persons the skin is not involved in miliary tuberculosis. The subcutaneous fat tissues are nearly always involved in miliary tuberculosis, in children as well as in adults. The author observed it in thirty cases on different parts of the body. In four patients miliary tubercles were also found in the striated muscles and twice in the muscle fascia.

**Generalized Actinomycosis**—Fellinger and Salzer report the clinical history of a man, aged 59, in whom primary pulmonary actinomycosis metastasized by way of the blood stream. Actinomyces could be demonstrated by the culture method not only in the pus of the different abscesses but also in the blood of the cadaver and in the splenic pulp. A review of the literature convinced the authors that this is the only case in which it was possible to detect Actinomyces in the blood. Following the description of the microscopic changes in the different organs, the characteristics of Actinomyces are discussed. The actinomycetes found in the different disease foci all showed the same behavior. It is emphasized that in anaerobic cultures the development was more rapid and more abundant than in aerobic cultures. Then the classification of the ray fungi is discussed and the authors conclude that there can be no doubt that the type observed in the reported case belongs to the actinomycetes. They further call attention to the fact that in the actinomycotic granulation tissues there was a marked formation of giant cells.

**Identity of Charcot's and Bottcher's Crystals**—Bogen points out that the Charcot-Neumann-Leyden crystals that occur in the bone marrow, in the spleen and in the sputum of patients with asthma are considered by some investigators as identical with Bottcher's sperm crystals. However, starting from the fact that morphologic identity of two crystals is no proof for identical optic behavior the author made new crystallographic investigations. He found that the Charcot-Neumann-Leyden crystals and the secondary calcium phosphate crystals are identical. Bottcher's sperm phosphate crystals, however, are crystallographically (and with that probably also chemically) not entirely identical with the Charcot crystals.

**"Retothelial" Sarcoma**—Roulet calls attention to a former report, in which he differentiated a new form of tumor, the "retothelial" sarcoma, from the common lymphosarcoma. Whereas the lymphosarcoma consists mainly of cells of lymphoid origin, the retothelial sarcoma consists primarily of framework cells, the retothelia, that is, the covering cells of the lattice fiber stroma. But while the earlier observations seemed to indicate that the retothelial sarcomas had a more favorable prognosis than the lymphosarcomas, experiences in the last two years, which are reported in this paper, indicate that the prognosis is not as favorable as was at first believed. The new observations show that retothelial sarcomas may become generalized and that in their first stages of development they have something in common with the hyperplasia of the reticular tissues, namely, proliferation of the reticular cells only. A case of pure hyperplasia of the reticular tissues is compared with a case of generalized retothelial sarcoma, and in connection with this the process of hyperplasia of the retothelial tissues is differentiated from the hyperplasia of the endothelial tissues. It is also pointed out that lymphatic leukemia may concur and may be followed by the tumor-like growth of the reticular cells, so that the assumption seems justified that in abnormal growth processes of the lymphoid tissues a reversion to less differentiated cell forms may take place.

**What Are Argentaffine Cells?**—Hamperl says that the terms argentaffine or argyrophil cells are used so widely that it seems advisable to determine what is meant by these terms, or what conclusions can be based on the "positive silver reaction" of a cell type. He found that, according to the method employed in staining with silver, a larger or smaller number of cell types prove to be argentaffine. He thinks that to designate a cell type as argentaffine without mentioning the method that was used in staining, is valueless, because the same type of cell may prove nonargentaffine when another method is employed. For instance, with the Gros-Schultze technic, pigment cells, yellow cells and cells of the suprarenal medulla, of the islands of Langerhans and of the anterior hypophysis are demonstrable, whereas with Masson's method only yellow and pigment cells can be demonstrated. The author discusses eight different methods of staining with silver and reaches the conclusion that the term argentaffine should be avoided. Moreover, since none of the described methods stain only one particular type of cells, it is not possible to base the differentiation of a cell type merely on the outcome of the staining with silver, but it is necessary that all histologically recognizable characteristics,

of which staining with silver is of course one of the principal ones, are taken into consideration. This is especially necessary in argyrophil cells of epithelial origin that are outside the epithelial tissues in the stroma of the mucous membrane of the digestive tract, for they may easily be confounded with pigmented cells in the mucous membrane stroma, which are likewise stainable with silver. Further, it is not permissible to infer from an identical silver reaction the identity or close relationship of cells that otherwise differ from one another.

### Zeitschrift für klinische Medizin, Berlin

122 1306 (Oct. 4) 1932

- Influence of Diet on Elimination of Oxalic Acid and on Colloid Protection of Urine in Human Beings K. Eimer and H. Bartels—p. 1
- \*Carbohydrate Metabolism in Diseases of Anterior Lobe of Hypophysis H. Lucke—p. 23
- Course of Functional Disturbances of Liver in Infectious Diseases H. Vogt—p. 33
- Behavior of Oncotic (Colloid Osmotic) Pressure in Course of Diseases of Liver K. Waller—p. 47
- Histamine Wheal and Methylene Blue Test for Demonstration of Latent Icterus K. Zink and J. Seide—p. 52
- Roentgenologic Aspects of Changes of Spleen Following Administration of Epinephrine and Simultaneous Changes in Blood L. Volicer and S. Vesin—p. 57
- Observations on Skin Capillaries in Patients with Exophthalmic Goiter M. Michael and W. Buschke—p. 83
- \*Pathogenesis of Raynaud's Gangrene O. Gagel and J. W. Watts—p. 110
- Disease of Myocardium with Disturbances in Cardiac Rhythm in Young Person with Tuberculosis G. von der Weth—p. 118
- Electrocardiographic Observations on Patients with Angina Pectoris (Ambulatory Type) S. Goldhammer and D. Scherf—p. 134
- Stenosis of Pulmonary Artery Caused by Paravertebral Abscess and Its Surgical Treatment G. Haberler and E. Risak—p. 152
- Investigations on Water Economy, Hemoglobin and Urine Curves in Kauffmann's Test K. Brucke—p. 164
- \*Clinical Investigations by Means of Reid Hunt's Reaction F. Sinek and L. Hartmann—p. 187
- Investigations on Physiology, Pathology and Pharmacology of Magnesium in Blood K. Lang—p. 206
- Investigations on Bromine Content of Human Blood F. Ewer—p. 244
- \*Thrombocytes in Carcinoma Charlotte Perl—p. 253
- Treatment of Certain Forms of Diabetes with Weak Electric Currents M. Dörle—p. 257
- Light Susceptibility of Persons with Hypersensitivity of Sympathetic Nervous System and Its Significance for Clinical Aspects of Ulcer of Stomach F. Ellinger—p. 272
- \*So-Called Anaphylactic Bronchial Asthma S. Perlroth—p. 281
- Can Peritoneum Act as Natural Dialyzer in Uremia? A. von Jenev—p. 294

**Carbohydrate Metabolism in Diseases of Anterior Lobe of Hypophysis**—Lucke maintains that so far there are only three disorders that can be traced with certainty to disturbances of the anterior lobe of the hypophysis: acromegaly, hypophyseal dwarfism and hypophyseal emaciation or cachexia. The disturbances of the carbohydrate metabolism in acromegaly, aside from the fact that their course fluctuates and that they may disappear spontaneously, are characterized by the following symptoms: high blood sugar content with and without glycosuria while the stomach is still empty, higher renal threshold for sugar, decreased hyperglycemic reaction to sugar and epinephrine, marked and prolonged hypoglycemic phase following alimentary hyperglycemia, and failure to respond adequately to insulin. The carbohydrate metabolism in hypophyseal dwarfism is characterized by a low blood sugar content while the stomach is empty, the alimentary hyperglycemia is frequently more pronounced than in normal persons, but because the renal threshold for sugar is higher there is either no elimination of sugar or it does not correspond to the degree of hyperglycemia. The reaction to epinephrine is usually within the normal limits, on the other hand, there may be an abnormally strong hyperglycemic reaction to epinephrine. Especially noteworthy is the hypoglycemic phase following a sugar tolerance test or following injection of epinephrine: the blood sugar values may become so low that there is danger of a hypoglycemic shock. Patients with hypophyseal dwarfism also have a pronounced susceptibility to insulin. In regard to hypophyseal emaciation the author states that the carbohydrate metabolism of these patients is the same as that of patients with hypophyseal dwarfism. In hypophyseal emaciation it is important to remember that the insulin tolerance is low and that consequently these patients cannot be subjected to a cure of forced feeding in which insulin is administered. The author concludes that the clinical observations in diseases of the



anterior lobe of the hypophysis indicate that this organ participates in the regulation of the carbohydrate metabolism

**Pathogenesis of Raynaud's Gangrene.**—In former investigations, Gagel and Watts were able to show that the cells of the lateral cornu are closely related to the sympathetic nervous system and that their axis cylinder processes pass through the anterior roots of the spinal nerve. Another investigator proved that irritation of the distal portion of the divided anterior root leads to vasoconstriction, that is, the vasoconstrictory fibers pass through the anterior roots. From these observations it may be inferred that the cells of the lateral cornu are centers of vasoconstriction. For this reason the authors decided to search for histologic changes in the cells of the lateral cornu and in those of the ganglions of the sympathetic nerves in disorders in which angiospasm or other disturbances of the innervation of the vessels play a part. They made such investigations on the spinal cord and on the ganglions of the sympathetic nervous systems of a patient whose disorder had been diagnosed as Raynaud's gangrene and who had died with the signs of cardiac weakness. Besides the spinal cord the authors examined the stellate ganglion of both sides and the ganglions of the sympathetic nerves to the seventh thoracic ganglion. The material that on macroscopic examination revealed no pathologic changes was fixed in alcohol and stained according to Nissl's method. Histologic examination of the ganglions of the sympathetic nerves did not reveal pathologic changes that could be considered as the cause of Raynaud's gangrene. The more surprising were the changes in the spinal cord. The cells of the lateral cornu presented inflation of their bodies, central dissolution of Nissl's granules and accumulation at the periphery of the cells, also shrinking, hyperchromatosis and marginal location of the cell nucleus. These changes were observable in nearly all cells of the lateral cornu, from the distal half of the eighth cervical segment to the second lumbar segment. All other cells of the spinal cord were free from pathologic changes. The authors conclude that the changes in the cells of the lateral cornu are an essential etiologic factor in the development of symmetrical gangrene.

**Clinical Investigations by Means of Reid Hunt's Reaction.**—Sinek and Hartmann made the Reid Hunt (acetone) test on 108 patients with various disorders. In patients with exophthalmic goiter the reaction was always positive. The intensity of the reaction did not generally correspond to the type and the severity of the symptoms but there was a certain proportionality between the reaction and the pulse frequency and the eye symptoms. In persons with a hypersensitive sympathetic nervous system the reaction was positive in approximately 80 per cent, but strongly positive reactions were rare in these cases. In sthenic as well as in asthenic patients with diabetes mellitus the Reid Hunt reaction was positive in 75 per cent. Strongly positive reactions were more frequent in the asthenic type than in the sthenic type. The positive outcome of the reaction could not be explained by a thyroidal behavior. In most of the patients with endocrine disturbances such as myxedema, acromegaly and adiposogenital dystrophy the reaction was negative, in a case of Addison's disease there was a weakly positive reaction. In uremia and in bronchial asthma the reaction was always positive. A weakly positive Reid Hunt reaction was occasionally present in other disorders without signs of a hypersensitive sympathetic nervous system. Thus the Reid Hunt reaction corroborates the clinical observation that the occurrence, the type and the intensity of thyrotoxic symptoms are dependent not only on the secretion of the thyroidal hormone but also on other constitutional factors.

**Thrombocytes in Carcinoma.**—Perl states that most textbooks on hematology now adhere to the opinion of Hayem, who had detected increased thrombocyte values in patients with cancer. Only during the last few days of life and in cases of bone metastasis have low values of thrombocytes been reported. The presence of a large number of cancer patients induced the author to investigate whether those conditions are typical or not. In thirty-three patients she counted the thrombocytes according to Fomio's method and according to Lampert's method. In the majority of cases she found the values according to Lampert higher than those according to Fomio, only in two cases of thrombopenia were the values about the same. She recommends Lampert's method because of its greater

simplicity. In most cases of carcinoma examined by her the thrombocyte values were low but still within normal limits. She also found that extensive bone metastasis does not necessarily lead to thrombopenia. In none of the patients was a marked increase in thrombocytes observed. Consequently the author thinks that the reports in the literature about an increase in thrombocytes are not generally valid.

**So-Called Anaphylactic Bronchial Asthma.**—Perlroth emphasizes that bronchial asthma is an allergic disease and that the term anaphylactic cannot be applied to bronchial asthma. To make this clear he defines the terms anaphylaxis, allergy and idiosyncrasy, and stresses particularly the difference in symptomatology between anaphylactic shock and asthma. He accepts an inferior constitution, which becomes manifest in an allergic diathesis as the main factor in the etiology of bronchial asthma. He therefore considers an anti-allergic treatment in the form of specific desensitization as the best therapy of allergic bronchial asthma, particularly in young persons. He thinks that the allergen-free chamber, although it has no real therapeutic value, is helpful in the recognition and differentiation of the specific allergens and in the course of the treatment.

### Zentralblatt für Chirurgie, Leipzig

59 2673 2736 (Nov. 5) 1932 Partial Index

- \*Possibility of Treating Hemolytic Shock Result of Blood Transfusion in Light of Experimental Work. E. Hesse and A. Filatov—p. 2674
- Measures to Reduce Incidence of Thrombo-Embolism in Operation on Varicose Veins. J. Vigyazo—p. 2681
- Unusual Result of Muscle Tear. C. Hammesfahr—p. 2684
- Hesse's Symptom in Retroperitoneal Tumors. A. Zaiceva—p. 2685
- \*New Disease of Skeletal System. H. R. Paas—p. 2689
- Treatment of Compound Fracture of Patella. H. Boit—p. 2694

**Hemolytic Shock in Light of Experimental Work.**—Hesse and Filatov point out the utterly bad prognosis of severe hemolysis resulting from blood transfusion. While they believe that death in these cases is due to the loss of renal function, they reject on the basis of their histologic studies the purely mechanical explanation according to which renal capillaries become occluded by emboli and renal tubules by hemoglobin crystals and destroyed erythrocytes. Filatov had demonstrated in a previous work that anuria of hemolysis was caused by the spasm of renal arteries. By sectioning the splanchnics and denervating the kidneys he had proved that the spasm was of central origin. He concluded that the broken down hemoglobin caused a powerful irritation of the subthalamic region and therefore of the vasoconstrictors. Shock and arterial spasm lead to suspension of renal function with resulting albuminuria and hemoglobinuria. In their animal experiments the authors studied the effect of injection of hemolyzed and of incompatible blood on the blood pressure and the kidney volume by means of oncographic studies. In some of the animals they denervated the kidneys. The blood pressure fell and the kidney volume diminished. Denervation prevented shrinkage of the kidney volume only when it was total. A better means to counteract the arterial spasm was found in a new transfusion of compatible blood. They therefore recommend that, in a case of hemolysis consequent on blood transfusion, a fresh and massive new transfusion of compatible blood be done with as little loss of time as possible. A universal donor, usually available in large institutions, could be utilized, or, better still, one from group A or B. They advise against the kidney decapsulation method of Bancroft for the reason that at best only a partial denervation is obtained thereby. They suggest, however, that, if a new transfusion fails to give results, one may resort to the severing of the sympathetic renal nerve fibers of one kidney.

**New Disease of Skeletal System.**—Paas describes a skeletal deformity in a man, aged 31, which, according to him, does not resemble any of the types described heretofore. The patient had a bilateral coxa plana and valga, a double patella on each side shortening of the middle and end phalanges of the hands and feet, marked deformities of both elbow joints, scoliosis and spondylitis deformans of the lumbar vertebrae. The study of the six surviving sisters disclosed that one sister had identical bone and joint deformities, and a double patella on one side. Another sister, now dead four years, apparently fitted into the same picture. The author concludes that this is a new type of skeletal disease developing during growth and



affecting particularly the epiphyses of the bones of the extremities. Both sexes are predisposed. The condition is familial and apparently hereditary.

### Zentralblatt für Gynäkologie, Leipzig

56 2513 2576 (Oct 15) 1932

- Indications for Vein Ligation in Pyemia of Genital Origin C Clauberg —p 2514  
 Hormonal Pregnancy Reaction in Rabbits H Hofmann —p 2534  
 Effect of Pituitary Anterior Lobe Hormone in Urine of Pregnant Women on Ovary of Adult Mouse H U Hirsch Hoffmann —p 2538  
 X-ray Control of Madlener's Operation of Tube Compression H Fuchs —p 2542  
 Usually Large Meckel's Diverticulum in New Born Complicating Labor Case I Voncken —p 2544  
 Successful Dilatation of Cervical Canal H Keckels —p 2548  
 Congenital Occurrence of Premature Climacteric Without Cessation of Function A Hirschberg —p 2550  
 Injuries to Genitalia in Coitus F J Bilenko —p 2551

**Ligation of Vena Cava in Pyemia of Genital Origin**—Clauberg, in discussing Martens' postulate with regard to puerperal and postabortive sepsis, namely, that vein ligation be resorted to after the first or second chill, points to the results of conservative treatment as reported in the figures of Schroder and Stoeckel from the Kiel clinic. These authors showed 68.5 per cent of cures from conservative treatment of the type of cases in which Martens would have resorted to ligation. This compares more than favorably with the results obtained with vein ligation. He feels that, while the principle of ligation is correct, the indications of Martens are too arbitrary and premature. According to him a chill does not always signify an extension of the infectious process. As is known, chill may be produced by parenteral introduction of albumin, by breaking down of albumin or by blood transfusion. It is therefore difficult to tell when the veins are involved. An expectant, conservative method of treatment of puerperal or abortion sepsis, with as few examinations as possible, is advised. Vein ligation is indicated when signs of general damage, in the absence of signs of extension of local process, are evident. Because localization of the thrombus is uncertain, the vena cava is ligated at times with both spermatic arteries. The author resorted to this procedure in five cases, three of the patients recovered and two died. Because of the grave symptoms presented by the three patients who recovered, he feels that the operation was life saving.

**New Hormonal Pregnancy Reaction**—Hofmann's new hormonal pregnancy reaction differs from the original Aschheim-Zondek test in that he uses blood serum instead of urine. The idea of using serum instead of blood came to him at the next to the last congress for obstetrics and gynecology in Germany when a case was reported in which the Aschheim-Zondek test was several times negative in spite of a pregnancy in the fourth month, which was later proved by an abortion. In this case it was assumed that a hormonal blockage in the kidney was the cause of the negative pregnancy reaction, and so the author decided to try the use of blood serum for the pregnancy test. Another factor that induced him to try blood serum was that blood can be withdrawn at any time, while, if urine is used, only the morning urine is suitable, a factor that usually retards the completion of the test by as much as twenty-four hours. Rabbits were used as test animals because efforts to complete the pregnancy test in less than four days had led several authors to use rabbits, whose ovulation mechanism differs from that of mice, so that the test can be completed in a shorter period. In order to eliminate certain sources of error involved in the rabbit test, such as pseudo-estrus, infantilism, malformations or dermoid cysts, an exploratory laparotomy is performed to inspect the ovaries of the animals immediately before the test. The technic of the test is as follows. Twenty-five cubic centimeters of blood, which may be withdrawn from the patient at any time, is centrifugated and the serum shaken with ether. A female rabbit, weighing not less than 2,300 Gm., is laparotomized and the ovaries are inspected. Then approximately 13 cc of serum is slowly injected into the marginal vein of the ear. If the animal does not tolerate it well, the injection should be interrupted and continued about an hour later. Twenty-four hours later the ovaries are inspected and the presence of blood clots indicates gravidity in the woman from whom the blood specimen was taken. The author employed the method successfully in twenty-five cases and he admits that

such a limited number does not warrant a final evaluation, but he thinks that if further tests corroborate his results this pregnancy test will be more rapid than any other and will at the same time be exact. In a postscript he states that Brown in America has employed a similar method with the difference that he injected smaller quantities of serum (only about 3 cc). The author thinks that if such a small amount is injected the reaction is not sufficiently exact.

### Finska Lakaresällskapets Handlingar, Helsingfors

74 713 768 (Sept) 1932

- \*Melanuria and Hepatargia R Ehrström —p 713  
 Paratyphoid Epidemic Due to Bacillus Paratyphosus Breslau O Sievers —p 723  
 Tumor and Inflammation in Merkel's Diverticulum R Björkstén —p 734

**Melanuria and Hepatargia**—Ehrstrom describes a case of melanuria in subacute hepatitis, with death due to hepatargia, and cites an analogous instance reported by Peters. These cases, he says, show that melanuria is not alone pathognomonic for melanosis but may be a sign of marked liver insufficiency. Abderhalden's observation of polypeptides, built up of tryptophan and proline, in melanin substances, seems to afford an explanation of the origin of melanuria in fatal insufficiency of the liver.

### Hospitaltidende, Copenhagen

75 1095 1122 (Sept 15) 1932

- Physiologic Basis for Climacteric Psychoses and Neuroses and Folliculin Therapy with Hormone Analysis T Kemp, K Pedersen Bjergaard and G E Schröder —p 1095  
 \*On Congenital Esophageal Atresia with Esophagopharyngeal Fistula, Together with Remarks on Synchronism in Origin of Malformations (Cen) J Ipsen, Jr., and H Okkels —p 1113

**Congenital Esophageal Atresia with Esophagopharyngeal Fistula**—The histologic investigations of Ipsen and Okkels indicate that the atresia is primary, the esophagopharyngeal fistula resulting from a secondary growth of the esophagus into the trachea. They offer an hypothesis setting the teratogenic termination point of the esophageal anomaly and of the malformations which frequently occur with it at the middle of the second month. They assume that at this time the embryo is exposed to an injurious influence, possibly temporary, and are convinced that the causes of malformation are both exogenous and endogenous and that under special conditions the causes may act side by side.

### Ugeskrift for Læger, Copenhagen

94 963 982 (Oct 6) 1932

- \*Tubercle Bacilluria and Renal Tuberculosis T Eiken —p 963  
 Use of Internal (Oral) Agents in Gonorrhea V Genner —p 967  
 Case of Secco Intoxication T Dalsgaard Nielsen —p 969

**Tubercle Bacilluria and Renal Tuberculosis**—Eiken reports two cases with symptoms suggesting renal tuberculosis, in each of which tubercle bacilli were repeatedly found in the urine from one kidney, especially on cultivation on Petroff's substrate and inoculation in guinea-pigs. Macroscopic and microscopic examination of the excised kidney in each case revealed only simple inflammatory or degenerative changes. He assumes the condition to have been a tuberculous nephritis which can be viewed as an early stage of chronic-ulcerous renal tuberculosis. The prognosis for this stage, he says, is hardly as unfavorable as commonly thought, and demonstration of tubercle bacilli in the urine from one kidney is not an absolute indication for nephrectomy.

94 1005 1030 (Oct 20) 1932

- Treatment of Pulmonary Tuberculosis with 'Sanocrysin' K Faber —p 1005  
 \*Congenital Cataract in Volkmann Family C Rasmussen —p 1007  
 International Tuberculosis Conference in The Hague K Faber —p 1012  
 Prof H Møllgaard's Report at Tuberculosis Conference —p 1013

**Congenital Cataract in Volkmann Family**—Rasmussen presents the genealogical table of six generations of this family, comprising 246 persons. In this number there are 51 cases of cataract (23.6 per cent), 37 (30.6 per cent) among the 121 women, 21 (16.8 per cent) among the 125 men. In the branch completely accounted for to date there are 29 cases (42.6 per cent) among 68 persons, 18 (52.9 per cent) among the 34 women and 11 (32.4 per cent) among the 34 men.

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## THE TREATMENT OF PURPURA HEMORRHAGICA

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The title "purpura hemorrhagica" is chosen purposely to withdraw attention from the term "essential thrombocytopenia." Several observers have reported cases of this disease in which the platelets were relatively high or normal in number and yet hemorrhagic phenomena were present. On the other hand, platelets may number less than 100,000 without hemorrhagic phenomena. We have confirmed these observations in our group of cases and are convinced that the platelet factor, although of importance, is not an essential feature in this disease.

Capillary hyperpermeability, or capillary weakness, is essential for the production of hemorrhagic phenomena, which may occur if this condition is present alone or if both capillary hyperpermeability and platelet deficiency are found. However, if platelet deficiency is present alone, the hemorrhagic phenomena may not result. We feel, therefore, that the most important single factor, or in other words the common denominator, in this disease is capillary hyperpermeability.

The best index available of this state is the increase in bleeding time. Bleeding time should be set forth as an indicator determining progression or retrogression in this disease. In many of our cases we have found the platelets at a low level, but the bleeding time returned to normal long before there was an appreciable increase in the platelet count. Frequently, the bleeding time has lengthened without change in platelet figures. From our observations in a large group of cases, we feel that the control of the bleeding time, that is, keeping it within normal limits, has prevented many of the untoward results noted in the treatment of purpura.

This report is based on a study of fifty-three patients. The group is divided as follows:

- A Acute
  - 1 Acute progressive.
  - 2 Acute retrogressive, or spontaneous recovery.
  - 3 Acute becoming chronic.
- B Subacute or Chronic
  - 1 Chronic without acute hemorrhagic phenomena.
  - 2 Chronic with subacute hemorrhagic phenomena.
  - 3 Chronic with acute fulminating hemorrhagic phenomena.

<sup>1</sup>From the Department of Medicine, Jefferson Medical College of Philadelphia.  
This study was made possible by a grant from the J. Ewing Mears Research Fund.  
Read before the Association of American Physicians, Atlantic City, N. J., May 4, 1932.  
Because of lack of space this article is abbreviated here by the omission of three charts and the discussion. The complete article appears in the authors' report.

By acute progressive we mean that type of purpura hemorrhagica which either is fulminating from the very beginning until there is a distinct emergency, or progresses from a minor state to one of a major emergency, owing to hemorrhage. The second group, acute retrogressive, is that which may be mild at first and gradually disappear, or the hemorrhagic symptoms may be severe, reach a fulminating stage but suddenly become retrogressive, and spontaneous cure occurs.

### TREATMENT

*Spontaneous Recovery*—Any discussion of the treatment of this disease must take into consideration the fact that a large number of the cases recover spontaneously. Eleven of our cases fall into this group. In order to evaluate any of the special forms of treatment set forth as helpful, spontaneous recovery must be given suitable consideration. One of our patients has been well, as far as hemorrhagic phenomena are concerned for forty years, and another for twenty-nine years, yet the original condition was undoubtedly acute fulminating purpura.

Chart 1 is that of a boy, aged 12 years, with all the hemorrhagic phenomena, petechiae, ecchymosis, epistaxis, melena, hematuria, lengthening of the bleeding time and marked reduction in platelets, but with only a moderate reduction in hemoglobin and red blood cells. The condition cleared up spontaneously. No special form of treatment was given. Today he is symptom free and, with the exception of a positive capillary resistance and flicking test, is well.

*Recovery Following Removal of an Infectious Process*—There is another group of cases in which spontaneous cure might occur but the presence of an infectious process retards recovery. It is well known that a contributing factor in the development of this disease is acute or chronic infection. Such patients may recover, but as long as the infectious process, tonsillitis, prostatitis or the like is present, recurrences may follow. Some of these eventually become the subacute or chronic type. Such patients may be cured by the removal of the infectious process. Four of our cases fall into this group.

The subacute or chronic form, in which there may have been an acute exacerbation at the onset, or an acute exacerbation may occur at any time, occasionally is cured by the removal of the infectious process. Two of our cases fall under this heading.

### ACUTE FULMINATING PROGRESSIVE CASE

The acute fulminating progressive case, whether primary or an acute exacerbation of the chronic, is a true emergency. In many of these cases one should not wait for spontaneous recovery. Collapse may be precipitous. One of our patients was admitted at 10 o'clock in the morning bleeding from all mucous membranes, but did not seem to be in a particularly

critical condition. The patient was of blood type I. We were not able to get a donor until 4 o'clock in the afternoon. She died suddenly at 3:50.

#### BLOOD TRANSFUSION

Blood transfusion, contrary to the experience of some observers, when used in small or moderate dose at frequent intervals, skilfully administered, is almost a

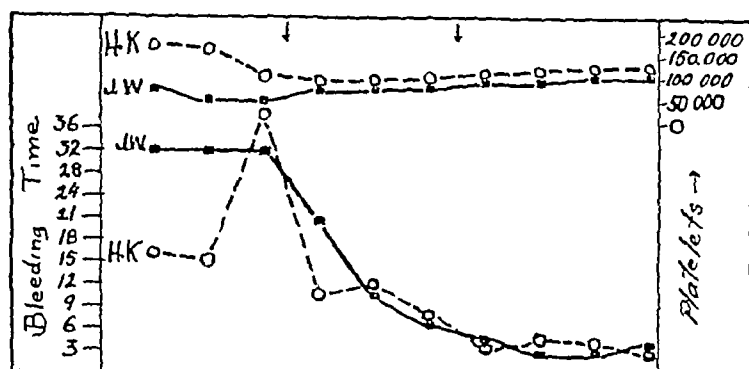


Chart 2—Effect of blood transfusion (denoted by arrows) on bleeding time and platelets

specific for a large number of cases of this type. Transfusion has been used successfully by us in twenty-four cases, or 46 per cent of the entire group. Chart 2 shows the results obtained by transfusion in two of our cases. These results are representative of those obtained in most of the acute progressive cases. The effect of transfusion on the bleeding time is evident. In both instances the bleeding time is lessened by one transfusion and reduced to normal by two. In these cases marked increase in the blood platelets failed to occur, which strengthens the point that the control of the bleeding time is a most important factor in the treatment of these cases.

It is important not to give a large transfusion unless the patient is in a critical condition from loss of blood. If such is the case the same indications for dosage hold as in acute hemorrhage from any cause. We use 300 cc as the standard dose in the adult, and vary this according to the square meter body surface of the individual. Young children are able to take more blood proportionately than the adult. The transfusion should be administered daily, at two, three or not more than five day intervals.

Transperitoneal or intraperitoneal transfusion is not effective in the control of the essential phenomena in these cases. As chart 3 shows, one of our patients (a child, aged 2½ years) was given two transperitoneal transfusions of 200 cc each without any good effect, in fact, the bleeding time rose from thirty minutes to two hours following the second transperitoneal transfusion. However, when only 140 cc of blood was given intravenously, the bleeding time dropped from this high level to four minutes within thirty-six hours. It was controlled by two more transfusions. This patient made an uninterrupted recovery and has been well since. We conclude that transperitoneal transfusion is not of value in the treatment of purpura hemorrhagica.

Failures have been reported in the treatment of the acute fulminating progressive case, and we have had this experience. One reason for failure is that the blood is not given often enough to control the bleeding time. Chart 4 demonstrates this point. In this case it was necessary to administer three transfusions in twenty-four hours in order to control the bleeding time. After the first transfusion, the bleeding time dropped from more than two hours to one and a half hours

and after the second to approximately one hour. After the third transfusion it went steadily down, until a normal level was reached in thirty-six hours. The blood platelet count, however, was continually below 50,000 per cubic millimeter.

A single transfusion may be sufficient to control the bleeding time and, even if anemia is present, it may not be necessary to give more transfusions as long as the bleeding time is within normal limits. However, the test for the bleeding time should be made daily, and if it shows a tendency to increase, or if the hemorrhagic phenomena recur, more transfusions must be given.

We think it is particularly important that the transfusion problem should not be left to an intern. Those of us who have had experience with this procedure know that when a transfusion is in the hands of an intern who has never performed one or who is careless, even though he has had some experience it is incorrectly done in the majority of instances. Not long ago one of us (H. W. J.) witnessed such an incident. After an hour had elapsed, the blood of the donor was on the floor, the operator, the assistant and the patient, but none of it had got into the veins of the patient where it was so much needed. Not infrequently the intern reports that a stated amount of blood has been given and yet on investigation one finds either that no blood or only a small amount of partially coagulated blood has been administered. Reactions under such conditions must be expected. Whenever difficulty is encountered in giving blood, a reaction occurs.

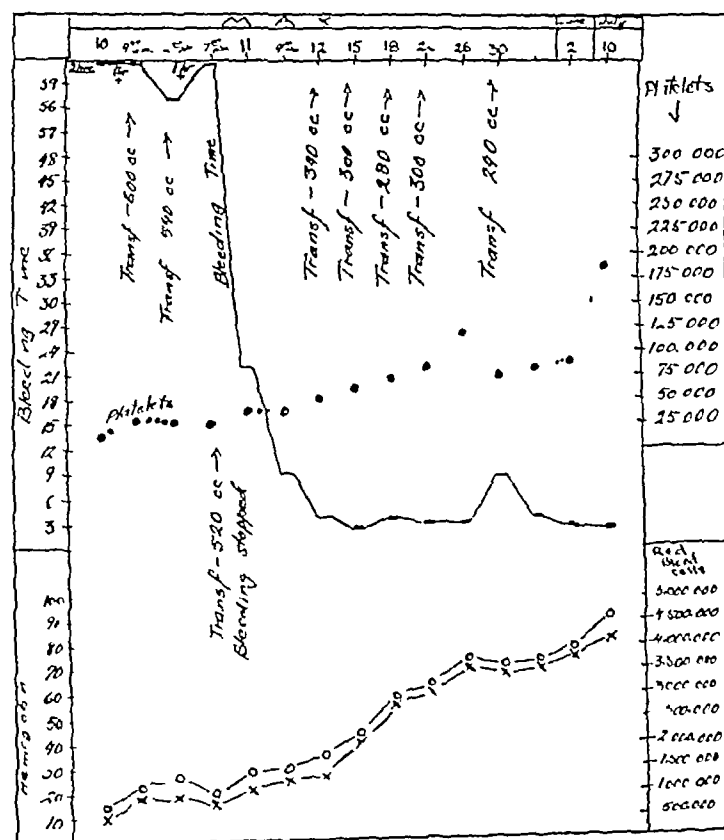


Chart 4—Necessity for repeated transfusions

Some observers have reported that after the use of transfusion in purpura hemorrhagica, exacerbation of the hemorrhagic phenomena has followed. It may be that these transfusions have been performed improperly or unskilfully. Large transfusions, that is, from 500 to 1,000 cc, are used as a routine in some clinics. Such amounts are seldom necessary. In some of our cases 100 cc has proved sufficient to control the bleeding time, and we have wondered whether 25 cc would not have

been just as satisfactory. In order that transfusions may be successful in these cases, the amount must be small in most instances, must be administered frequently enough to control the bleeding time and to keep it under control and must be given skilfully.

We do not wish to detract from the importance of the platelet factor in this disease, but, as we have mentioned before, this should not be emphasized as the essential point. Platelets may be little affected and yet the bleeding time may be brought under control by various forms of treatment. Bleeding time often rises before there is evidence of platelet reduction. The bleeding time is often brought under control many days before there is any notable increase in the platelet count. The three stages, therefore, in the treatment of acute progressive purpura are intravenous transfusion, removal of infection, and the use of diet, iron, ultra-violet ray, viosterol or halibut liver oil with viosterol 250 D.

#### DEATHS

We have had nine deaths, which may be included under the heading "acute progressive." Five of these patients died from two to twenty-four hours after admission, before any special treatment could be administered. One died from a double suppurative mastoiditis following middle ear disease due to a postnasal pack. We do not use postnasal packs to control the epistaxis. This can be done, usually, with small cotton pledgets saturated with a thromboplastic substance. With a firm packing, the already weakened mucous membrane is further injured, infection is more likely to spread into the middle ear, and the hemorrhage is often greater following the removal of the pack than before it was inserted. One patient had miliary tuberculosis as well, another a caseous tuberculosis of the mediastinal lymph glands.

The last patient in this group died of intracranial hemorrhage. The progress is indicated in chart 5. It will be noticed that three transfusions were given intravenously, the bleeding time, which had been lengthened, was reduced to normal, but two days later it began to rise. At this time another transfusion was indicated but was not given until six days later. The bleeding time was then twenty-four minutes. A large dose of blood was used, 475 cc (for a boy, aged 8 years) with no benefit. Roentgen treatment of the spleen in stimulating doses was applied, and the bleeding time rose to forty-five minutes. The next day massive doses of x-rays were given, which was followed by a moderate drop in the bleeding time, extreme nausea and vomiting ensued. Signs of massive intracranial hemorrhage became evident, and the boy died twelve hours later. This case emphasizes the importance of controlling the bleeding time by the use of sufficient transfusions. The danger of intracranial hemorrhage is present whenever the bleeding time is greatly lengthened. It is to be noted also that although the platelets had risen from 50,000 to 180,000, the bleeding time was thirty-seven minutes.

#### TREATMENT OTHER THAN TRANSFUSION

Cures have been reported in many cases in which a great variety of substances have been used. Pennsylvania is noted for many things, but "heving" is one of the unusual forms of treatment for which it is peculiar.

One of our patients in whom we felt we had obtained an unusually good result asserted that all her improvement was due to the fact that a factory worker, who is a hever, threw a spell about her during the time when

she was having the most pronounced hemorrhage. In a small town, not far from Easton, there is a hever who is aware of the fact that many of these patients with purpura get well spontaneously within two or three weeks. Whenever a patient is presented to him with hemorrhagic phenomena, he makes a few passes over him, mumbles unintelligible words, and states that the change will come the next phase of the moon, and in many instances he is correct. One patient, a child, critically ill, for whom hope for recovery was gone, was anointed, and improvement followed immediately. These cases are examples of spontaneous recovery. Another patient gave a history of marked improvement after the injection of typhoid vaccine, another after one injection of triply distilled water intravenously. Whole liver has been suggested as a means of increasing platelets and improving the blood count in these patients. Liver extract, both by mouth and parenterally, has been used. We use Valentine's liver extract E-29. Iron goes back to 1857 as a method of treatment in this condition. In fact, at that time it was the treatment. Sulphuric acid has also been used. Ergot and turpentine were employed in the past with beneficial results. The enumeration of these forms of treatment only

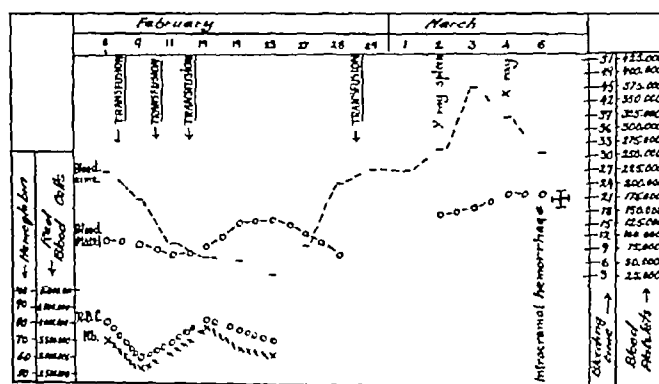


Chart 5—Control of bleeding time. Insufficient blood transfusions.

serves to emphasize the point that many substances and many methods may seem to be effective in the treatment of this condition.

**Diet**—Willan,<sup>1</sup> in 1801, suggested that proper attention be given to an abundant diet, free air and freedom from worry. Today, just as in pernicious anemia, one frequently obtains the history of a meat spare or meat free diet, we find in many of our patients a distaste for fresh vegetables, fruit and in some cases protein. Bancroft and Kugelmass<sup>2</sup> demonstrated the value of a high protein diet in the increasing number of platelets. It is useful during the hemorrhagic stage, when solid food is not well tolerated. The arrangement of an adequate diet during this period usually is neglected. So much attention is directed to the control of hemorrhage that as the patient has a distaste for food because of swallowed blood, and as coarse or solid food irritates the gums and increases the hemorrhage, the question of diet is slighted.

As soon as possible the high protein, high vitamin diet, with special attention to vitamin C, is given. This diet is used both during the convalescent period and while the patient is in the hemorrhage free state. Some of our cured patients have been on this diet for a number of years.

<sup>1</sup> Willan R. On Cutaneous Diseases. London 1808 p 482.  
<sup>2</sup> Bancroft F W, Kugelmass I N and Stanley Brown Margaret. Evaluation of Blood Clotting Factors in Surgical Diseases. Ann Surg 90 161 (Aug) 1929.

**Vitamins** Many of our patients have reported a distaste for fresh green vegetables Phillips<sup>3</sup> noticed an increase in platelets following the use of viosterol We give viosterol or halibut liver oil with viosterol 250 D in the dosage of from 20 to 40 drops three times a day during the hemorrhagic and posthemorrhagic period

**Ultraviolet Irradiation**—Cramer and Drew<sup>4</sup> have pointed out that there is an increase in the platelet count after ultraviolet irradiation Many of our patients have been benefited by exposure to the sun's rays

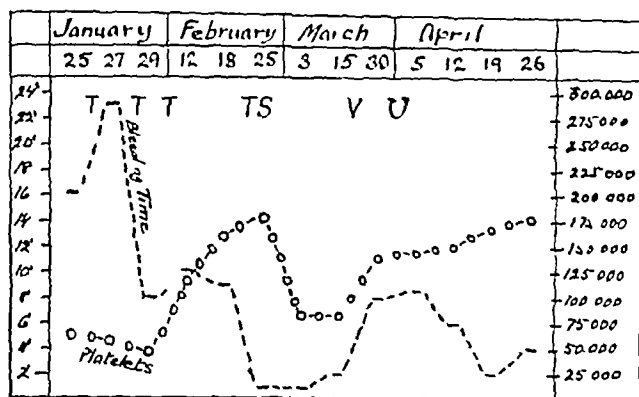


Chart 6—Ineffectiveness of blood transfusions. There was little change in the number of platelets after splenectomy. T, transfusion; S, splenectomy; V, vitamin; U, ultraviolet rays.

when that is not possible we advise the frequent use of the ultraviolet rays

In not a few instances, using any or all of the three forms of treatment just mentioned, we have noticed an increase in the platelet count a shortening of the bleeding time and improvement in the weight and general health of the individual However, one cannot state that any one or any combination of these forms of treatment is responsible for the results Unless carefully controlled experiments are carried out in the animal or in the patient, the use of these measures must be more or less empirical From a practical standpoint we recommend their use, but we keep in mind always the fact that the improvement which seems to follow their use may be coincidental

**Drugs**—Solution of Anterior Lobe of Pituitary Gland Two of the patients developed long profuse periods after they had been under control, the infectious process removed and various forms of treatment administered In each instance, by the use of solution of the anterior lobe of the pituitary gland we have been able to bring the periods under control and keep them regular and within normal limits

**Crotalus and Bothrops Antitoxin** This has been used in the treatment of acute purpura The Bothrops antitoxin would seem to be superior to the Crotalus antitoxin, as it contains a greater amount of substances necessary to neutralize the hemorrhagic toxin

The treatment, then, of the acute progressive case is to give repeated whole blood transfusions intravenously in small amounts, at frequent intervals, so that the bleeding time is kept under control until the danger period is past or all hemorrhagic phenomena have disappeared Infectious processes should be eliminated A high vitamin, high protein diet with the addition of viosterol in large doses should be given Iron from 60 to 90 grains (4 to 6 Gm) daily or iron and liver

and liver extract may be administered The patient should get out in the open or receive treatment with the ultraviolet rays Occasionally when these methods are not proving entirely successful, high voltage roentgen therapy over the spleen may bring about the desired effect However roentgen treatment alone seldom brings about a cure It is often attended with nausea and vomiting which may be harmful If other methods can be used successfully roentgen therapy is not indicated At times none of the methods that we have set forth bring the symptoms under control In the acute progressive form, such a result is rare It occurred in only one case of our entire group Splenectomy was then performed

**Splenectomy**—Splenectomy has been the standard form of treatment since 1916 Quenu<sup>6</sup> reported 122 cases in 1929 with a mortality of 16 per cent Whipple<sup>7</sup> and Spence<sup>8</sup> have reported a mortality of 80 per cent of the acute cases One cannot question the beneficial results following a splenectomy in some patients However as Whipple and Spence have set forth these results are not always brilliant Recurrence of hemorrhagic phenomena, rise in bleeding time and drop of the platelet count may occur

Five of our patients have been treated by splenectomy, with one death One of these patients was treated by the methods which we have already set forth but which failed to control the symptoms The spleen was removed, after suitable preparation by transfusion and Dr Moon was able to isolate a streptococcus in pure culture Since this time the patient has remained perfectly well

#### POOR RESULTS WITH SPLENECTOMY

Chart 6 is that of a girl aged 15 years, who received three transfusions without the complete disappearance of hemorrhagic phenomena and without controlling the bleeding time One reason for failure was that a great

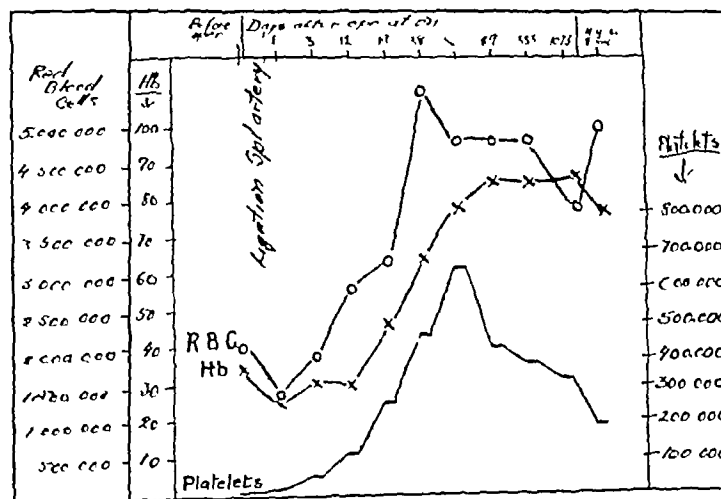


Chart 8—Ligation of the splenic artery in a boy aged 15 years, with acute purpura The bleeding time became normal after operation From Van Goidsenhoven

deal of difficulty was experienced in the performance of the transfusions We believe that some of the blood given was partially clotted Rise in temperature and epistaxis followed in two instances After a period of fifteen days another transfusion was given and a splenectomy was performed The bleeding time was controlled, but the number of platelets fell from

3 Phillips R A Robertson D F Corson W C, and Irwin G F Effect of Irradiated Ergosterol on Thrombocytes and Coagulation of Blood Ann Int Med 4 1134 (March) 1931  
4 Cramer W, and Drew A H The Effect of Light on the Organism Brit J Exper Path 4 271 (Oct) 1923  
5 Taylor, K P A Apparent Cure of Purpura Hemorrhagica by Bothropic Antivenin, Bull Antivenin Institute 3 42 (July) 1929

6 Quenu Jean La splenectomie dans le purpura hemorrhagique, Rev de chir Paris 67 24 1929  
7 Whipple A O Splenectomy in Purpura Hemorrhagica, Surg, Gynec & Obst 42 329 (March) 1926  
8 Spence, A W Results of Splenectomy in Purpura Hemorrhagica, Brit J Surg 15 466 (Jan) 1928

175,000 to 78,000. About three weeks after the operation, coincident with a moderate rise in the number of platelets, the bleeding time rose and hemorrhagic phenomena recurred. At this time five-minute general body exposure to ultraviolet rays at 30 inches were given daily, viosterol, 30 minims (1.8 cc), three times a day and iron and ammonium citrate, 20 grains (1.3 Gm), three times a day were given. The hemorrhagic phenomena disappeared, and the bleeding time was controlled. The platelets at present are slowly rising and there is a gain in weight of 6 pounds (2.7 Kg). We expect that a cure will be effected after tonsillectomy. This case emphasizes the fact that splenectomy is not always successful. Other measures must be utilized.

Splenectomy may not be successful if infection is not removed as soon as the patient's condition warrants it. In one of our patients, although splenectomy was performed and the patient was well for a time, the hemorrhagic phenomena recurred and until the tonsillar infection was removed these phenomena continued. This is shown in chart 7. The red cells and hemoglobin in this patient were normal, although the platelets, when we first saw her, were 56,000 and the bleeding time was twenty-three minutes. This case falls in the group of chronic cases, of which we had two, and for this, we think, the best indication for splenectomy. This was performed and followed by the usual rise in platelets. The hemorrhagic phenomena disappeared. Following a sore throat, eight weeks after operation, epistaxis, menorrhagia and petechiae developed. A tonsillectomy was performed and there has been no recurrence of symptoms for more than a year.

The indications for splenectomy are

- 1 The acute progressive case which does not respond to other methods of treatment
- 2 The chronic case with a normal, or nearly normal blood count, but long bleeding time and a low platelet count
- 3 The chronic case with anemia and other manifestations which is not improved by transfusions, removal of infection and forms of treatment already set forth

#### LIGATION OF THE SPLENIC ARTERY

One of the newer methods of treatment is that of ligation of the splenic artery. Von Stubenrauch,<sup>9</sup> in 1922, reported the first case of ligation of the splenic artery for treatment of this disease although William J. Mayo<sup>10</sup> had suggested in 1910 that ligation of the splenic artery might be used in diseases of the blood just as ligation of the thyroid artery was resorted to in diseases of the thyroid gland. Thirty-four cases have been reported with but two deaths.<sup>11</sup> The results, as far as control of hemorrhagic phenomena and bleeding time are concerned, are similar to those obtained by splenectomy but are slower in production. In one of Van Goidsenhoven's<sup>12</sup> cases the platelets reached a high level nineteen days after operation and a peak fifty-six days after operation, this patient has been observed for four years and eight months and is clinically well.

The mortality is lower in this operation, the procedure is less difficult and requires less time. The ligation of the splenic artery is done from 5 to 6 cm from the celiac axis. Necrosis or infarct has not occurred in the experimental cases and the spleen

reduces in size from 28 to 70 per cent at the expense of the pulp.<sup>13</sup> It would seem that this method might supplant splenectomy. The indications for its use are similar.

#### COMMENT

In the discussion of the various forms of treatment of this disease one is impressed by several striking features: first, the large number of spontaneous recoveries; second, the marked seasonal tendency, namely, the high incidence of cases in the spring; third, that a great number of substances or methods seem to be efficacious in aiding recovery; and, fourth, that transfusion acts, in many cases, almost as a specific.

Several years ago pernicious anemia was being discussed from similar standpoints. We have concluded that in any condition other than acute hemorrhage, in which transfusion is particularly beneficial, the solution of that problem does not lie in supplying new blood. We feel, therefore, that we are dealing with a deficiency disease, occurring in an individual with a so-called hemorrhagic constitution, the acute phase of which is precipitated by an acute or chronic infectious process which is active, or by other substances which affect capillary permeability.

In treating a patient with purpura one should not, we think, have immediate recourse either to splenectomy or to ligation of the splenic artery but should first consider that the individual may recover spontaneously. By carefully observing the bleeding time and the hemorrhagic phenomena, one may determine the progress of this disease. The index of the treatment, as we have already set forth, is the bleeding time, and this should be performed daily, both before and after transfusion.

Transfusion, properly administered, intravenously, in small amounts and frequently, controls the bleeding time, retards the production of hemorrhagic phenomena and brings about a cure. Following this, certain vitamins, such as viosterol or halibut liver oil with viosterol 250 D, may be used. Liver extract, ultraviolet rays, a high protein, high vitamin diet and iron should be administered. It is imperative that the patient report at frequent intervals, weekly at first and bimonthly later. Infectious processes should be removed. If hemorrhagic phenomena recur and the bleeding time rises, more transfusions should be given or splenectomy or ligation of the splenic artery should be considered. Of the two, ligation of the splenic artery is the easier, and the mortality seems to be lower.

#### CONCLUSIONS

- 1 Spontaneous cures are frequent, but careful consideration of the diet should be made, and infection should be eliminated in order that the disease process may not recur.
- 2 The acute progressive case is best treated by small intravenous transfusions, frequently administered.
- 3 More attention should be paid to the bleeding time than to the platelet count.
- 4 It is imperative that the bleeding time be kept under control in order that the hemorrhagic phenomena may not recur and that intracranial hemorrhage may be prevented.
- 5 Infectious processes should be eliminated and the patient placed on a high protein, high vitamin diet.
- 6 Viosterol and iron should be given by mouth and ultraviolet ray treatment or outdoor life instituted.

<sup>9</sup> von Stubenrauch, L. Die Ligation der Arteria Lienalis. Deutsche Wochenschr. f. Chir. 172: 174, 1922.

<sup>10</sup> Mayo, W. J. Surgery of the Spleen. J. A. M. A. 54: 15 (Jan. 1), 1910.

<sup>11</sup> Laver, E. Ueber die Drosselung der Milzarterie mit Fascie. Arch. f. Klin. Chir. 16: 112, 1911.

<sup>12</sup> Van Goidsenhoven, F. Le traitement de la thrombopénie essentielle. Belge. med. 19: (Feb.) 1929.

<sup>13</sup> Ross, C. Effetti della legatura dei vasi splenici sulla struttura e funzione della milza. Ann. ital. di chir. 6: 127, 1927.



7 Failure in the treatment described may be due to large transfusions, improperly administered transfusions, too long an interval between transfusions or an insufficient number of transfusions to control the bleeding time and relieve the symptoms

8 There are a few patients who fail to respond to any or all the forms of treatment. Splenectomy or ligation of the splenic artery, after proper preparation by transfusion, should then be performed

9 There are a few patients with a normal blood count, low platelet count and long bleeding time who are in the subacute or chronic stage, who are best treated, as far as is known now, by ligation of the splenic artery or by splenectomy

10 We feel that the methods of treatment suggested are not specific and that it is possible that we are dealing with a deficiency disease occurring in an individual with a so-called hemorrhagic constitution the acute phase of which disease is activated by a toxin or toxic substance affecting capillary permeability. In the not too distant future we feel that the treatment will be so simplified as to resemble that now used in pernicious anemia, for the two diseases have many points of similarity

## OBSERVATIONS ON THE EFFECT OF INSULIN IN THIN PERSONS

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Since its discovery, insulin has been employed as a therapeutic agent in a variety of miscellaneous disorders. Favorable results from its use have been reported, for example, in such apparently divergent conditions as cardiac decompensation,<sup>1</sup> scleroderma,<sup>2</sup> cancer,<sup>3</sup> toxemia of pregnancy,<sup>4</sup> certain types of uterine hemorrhages,<sup>5</sup> morphinism,<sup>6</sup> tuberculosis,<sup>7</sup> to make premature infants gain weight,<sup>8</sup> peptic ulcer,<sup>9</sup> neurosis,<sup>10</sup> hyperthyroidism,<sup>11</sup> rickets,<sup>12</sup> pellagra,<sup>13</sup> chronic ulcers and circulatory disturbances of the extremities,<sup>14</sup> and

even to hasten the healing of experimental fractures.<sup>15</sup> But, next to its value in the treatment of diabetes, insulin appears to have its greatest practical usefulness in the treatment of nondiabetic malnutrition.

American pediatricians were the first to use the drug for this purpose. In 1923, Pitfield<sup>16</sup> injected 1 unit of insulin a day in two patients with infantile inanition, with a resulting gain in weight. Falta<sup>17</sup> deserves credit for introducing insulin in the treatment of nondiabetic undernourishment in adults. In 1925 he described the cases of three thin persons who had gained weight rapidly with insulin and who had held their weight after the omission of the drug. He stated that the added weight was not due to edema, because he gave theophylline without producing any diuresis. His patients were given 10 units of insulin from three to five times a day, and this dosage was increased to as much as 30 units five times a day. Subsequently, many other favorable reports of the beneficial effects of insulin in adult malnutrition have appeared. Few exact studies have been forthcoming, however, as to why it should be of value in this connection. This paper reports observations on certain effects of the drug in nineteen normal, thin individuals. These observations may help to explain some of the reasons for its popularity in the treatment of malnutrition and other nondiabetic conditions.

### CLINICAL MATERIAL

The persons who were studied were seven men and twelve women, all physically normal, whose ages varied from 21 to 56 years. They were thin for their age, sex and height, ranging in weight at the beginning of these observations from 72 to 167 pounds (from 33 to 76 Kg.) and in height from 58 to 74 inches (from 147 to 188 cm.). All but one had been chronically underweight for years and had tried unsuccessfully to gain weight by such measures as forced eating, medicines or prolonged vacations and rest cures. In one case there had been no apparent reason for an acute loss of approximately 45 pounds (20 Kg.) in about five months' time.

Most of the group, admittedly, were somewhat nervous and apprehensive individuals, easily fatigued and lacking in energy. Some thought that they had indigestion or poor appetites and had been bandied about by a good many doctors, while others were considered to be hearty eaters but of the "thin type." All were anxious to gain weight and were extremely cooperative in this investigation.

They were taught how to measure and inject insulin and how to sterilize and take care of an insulin syringe and needles. They were encouraged to eat a liberal, unmeasured diet during the period of observation. The majority were given 10 units of insulin three times a day about twenty to thirty minutes before meals, four received 10 units twice daily, and in three the dosage of insulin was increased to 15 or 20 units three times a day.

### PLAN OF INVESTIGATION

The general plan of study included various observations made in each case before, during and after the use of insulin. The weight of each patient and a note on his general condition were recorded at weekly

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3 Michaelis, O. Influence spécialement remarquable de l'insuline dans un cas de sclerodermie totale, *Bruxelles med* 9 560 (March 17) 1929.  
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intervals The red blood count, blood sugar level, blood urea and nonprotein nitrogen concentrations, the basal metabolic rate and the phenolsulphonphthalein excretion were studied in seven cases The excretion of nitrogen in the urine the concentration of protein in the plasma, and the total blood, plasma and corpuscular volumes were followed in six cases The fluid intake and output were measured in seven cases for a period of ten consecutive days during the use of insulin and for a similar period after the omission of insulin

The methods utilized were as follows

Standardized red blood cell counting pipets were used in counting the red blood cells, and venous blood counts were made All blood examinations were made on fasting specimens The blood sugar determinations were made according to the method of Folin and Wu<sup>18</sup> The nonprotein nitrogen, the plasma-protein concentration and the urinary nitrogen were determined by Folin's micro-Kjeldahl method<sup>19</sup> The nitrogen metabolism was studied by determining the nitrogen excretion in samples of twenty-four hour urine before insulin treatment was begun, and at intervals of from one to two weeks during and after the cessation of insulin therapy The total blood, plasma and cor-

puscular volumes were determined according to the dye method described by Keith Rowntree and Geraghty,<sup>20</sup> except that congo red was used instead of vital red The basal metabolic rates were determined by a standard Benedict-Roth machine

in following up forty-two patients who gained weight with insulin, found that twenty-three maintained their increased weight for three months or less, while only nineteen kept their gained weight for six months or longer

Shortly after the insulin injections were started, there was a marked improvement in sense of well being Some of the patients remarked how wonderfully well they felt, while others said insulin made new individuals of them Their appetites increased and occasionally became voracious Most of the group said that they would gladly have taken insulin to feel so well even though there had been no gain in weight They became less nervous and more cheerful and said they felt stronger, so that they became more efficient and could do more work Thus, the use of insulin clinically appeared to have a notable tonic effect

It was interesting to watch wrinkles disappear as weight was gained and to see the skin develop a healthy appearance The added fat, as a rule, was distributed generally over the face, neck, breasts, abdomen, shoul-

TABLE 1—Gain in Weight in Thin Patients with Insulin \*

Case	Standard Normal Weight for Height Age and Sex	Weight Before Insulin	Weekly Weights of Patients During Insulin Therapy								Gain in Weight During Insulin Therapy	Weight After Insulin Was Omitted
			1	2	3	4	6	8	10	12		
1	194	97	102	106	112	118	112	112	117	117	20	Same in 8 months
2	137	105	113	116	118	120	120	121			16	Same in 6½ months
3	141	112	115	116	118	119	121	122			10	124 in 6 months
4	143	103	108	114	114	119	127½				24½	143 in 12 months
5	102	72	75	78	81	82	83	84	85		13	Same in 6 weeks
6	119	90	95½	97	99	101	103	104	105		15	Same in 11 weeks
7	135	89	95	98	100	102	104	105	108		19	118 in 10 weeks
8	130	68	103	106	107	110	111	114	117		19	Same in 7 weeks
9	167	141	146	151	155	159	163	169	171	172	31	183 in 14 months
10	116	97	101	104	107	108	110				13	Same in 6 weeks
11	178	167	172	175	178	179	179				12	Same in 6 weeks
12	144	134	141	140	145	146					12	Same in 9 weeks
13	167	132	139	141	143	145					13	140 in 10 weeks
14	140	134	137	140	143						9	Same in 6 weeks
15	133	113	116	119	122						9	114 in 6 months
16	119	97	97	99	101	104½	107				10	Taking insulin
17	126	100	103	106	108						8	Taking insulin
18	131	119½	124								4½	Taking insulin
19	146	132	136½								4½	Discontinued insulin because of local reactions

\* Weight is recorded in pounds

puscular volumes were determined according to the dye method described by Keith Rowntree and Geraghty,<sup>20</sup> except that congo red was used instead of vital red The basal metabolic rates were determined by a standard Benedict-Roth machine

#### CLINICAL RESULTS WITH INSULIN THERAPY

After insulin injections were begun each person began to gain weight at once and several continued to gain with astonishing rapidity This is shown by the weekly weight charts recorded in table 1

There appeared to be two types of weight gain encountered In one group the gain in weight was rapid and fairly continuous throughout the period of insulin therapy and in a few instances continued after the omission of insulin In the other group gain in weight was rapid at the beginning of insulin therapy became less marked as time went on and finally the weight remained stationary whether or not insulin was taken It is interesting that very few of the individuals lost much of the weight gained even at a considerable period after omission of insulin Recently Nichol<sup>21</sup>

ders, back and buttocks In one case, however, the deposit of fat was most obvious in the breasts and in another in the abdomen

Local skin hypersensitiveness to insulin appeared at the site of injection in six of the nineteen cases, from one to six weeks after the beginning of treatment This is a high incidence of this manifestation as compared with its relative rarity in patients with diabetes On the other hand, Nichol<sup>21</sup> reported only three cases of urticaria in his much larger series Tuft<sup>22</sup> feels that a reaction such as this to insulin is not necessarily a specific hypersensitiveness to insulin protein but rather is dependent on some irritant quality of the particular preparation used In our group, however, persons who became sensitive remained sensitive to three different brands of insulin, thus suggesting that for some reason they had become insulin sensitive with exceptional ease

#### CLINICAL CAUSE OF GAIN IN WEIGHT

The gain in weight accomplished by insulin must result from an increased intake of food or be due to an increased capacity of absorption and assimilation Undoubtedly, the psychologic effect of insulin as an appetizer is significant Persons not suffering from diabetes who take insulin learn about reactions and

<sup>22</sup> Tuft Louis Insulin Hypersensitiveness Immunologic Considerations and Case Reports Am. J. M. Sc. 176 707 (Nov.) 1928

know that they are threatened with dire and unpleasant results unless they eat copiously after an injection. It is easy, too, for them to imagine a reaction and to eat extra food to avoid or cure one. On the other hand it has been shown experimentally by Fonseca,<sup>23</sup> Okada<sup>24</sup> and Lueders and Watson<sup>25</sup> that insulin stimulates gastric juice and that it also increases the pancreatic and biliary secretions.

TABLE 2—Nitrogen Excretion in Thin Persons Taking Insulin \*

Case	Before Insulin Therapy		During Insulin Therapy						After Insulin Was Omitted			
1	98	100	106	154	80	108	121		97	95	67	79
2	102	131	116	165	126	130	160		92	92	62	112
3	101	131	125	151	112	148	114	118	98	110	90	116
4	100	88	96	145	94				57	97		
5	109	130	125	88					74	60	108	
6	51	140	157	134	118	110			95	73	96	71
Aver	85	120	121	130	106	124	132	118	85	87	85	94

\* The nitrogen is recorded in grams per twenty four hour samples of urine. The determinations were made at intervals of from one to two weeks.

The edema that appears in certain diabetic patients from water retention when insulin is first administered is a familiar picture. It is improbable that the development of edema has anything to do with the gain in weight from insulin observed in normal individuals. The water balance was measured in seven instances. The relation between the intake and the output of fluid remained unchanged during and after insulin therapy, and in no case was there any diuresis when insulin was omitted.

#### THE QUESTION OF FOOD INTAKE AND ABSORPTION

That insulin increases the appetite and produces an increased ingestion of food is suggested by a study of the nitrogen excretion in the urine. During insulin

TABLE 3—Phenolsulphonphthalein Excretion in Thin Persons Taking Insulin \*

Case	Before Insulin Therapy		During Insulin Therapy		After Insulin Was Omitted	
1	61		49		60	
2	64		56		62	
3	55		40		72	
4	60		49		74	
5	44		34		41	
6	52		25		57	
7	44		36		54	
Average	54		41		60	

\* The phenolsulphonphthalein excretion is expressed in per cent of 0.006 Gm. of the dye excreted in the urine, two hours and ten minutes after its intramuscular injection.

therapy the nitrogen excretion rose considerably, and after insulin was omitted it decreased to near the original level. This occurred in spite of the fact that some of these patients continued to gain weight after the drug was discontinued and thought they were eating an abnormally large amount of food.

That insulin may help to increase the absorption and assimilation of food is suggested by a study of the phenolsulphonphthalein excretion during treatment. There was a uniform decrease of from 8 to 27 per cent in the excretion in the urine of the intramuscularly

injected phenolsulphonphthalein during the period of insulin treatment and a return to the original level after the omission of insulin. It is not unreasonable to account for this finding as due to an increased excretion of phenolsulphonphthalein in the bile following the stimulation of the flow of bile by insulin. Hanner and Whipple<sup>26</sup> have shown that from 10 to 15 per cent of the usual dose of the dye, when injected intramuscularly as a test for renal function, can be eliminated by the liver route. As has been mentioned, the flow both of bile and of pancreatic juice, in experimental animals at least, is increased by insulin. Perhaps, therefore insulin may actually increase absorption of food in normal individuals by its action on liver and pancreas though, before this hypothesis can be accepted, further study is necessary. The decrease in the phenolsulphonphthalein elimination did not appear to be a result of a

TABLE 4—The Blood Nonprotein Nitrogen and Urea Nitrogen in Thin Persons Taking Insulin \*

Case	Before Insulin Therapy		During Insulin Therapy		After Insulin Was Omitted	
	Nonprotein Nitrogen		Urea Nitrogen			
1			8		10	
2	23		7		10	
3			11		10	
4	40		12		10	
5	20		8		13	
6	25		11		21	
7	22		8		14	

\* The nonprotein nitrogen and urea nitrogen concentration are recorded in milligrams per hundred cubic centimeters.

decreased renal function because the blood urea and nonprotein nitrogen concentration showed no essential variation during the periods of observation, nor did albuminuria develop in the cases studied when the phenolsulphonphthalein excretion fell.

#### THE TONIC EFFECT OF INSULIN IN NORMAL THIN PERSONS

That insulin acts as an admirable tonic is suggested by a study of the plasma protein concentration, the red blood cell count and the circulating blood volume of

TABLE 5—The Plasma Protein Concentration in Thin Persons Taking Insulin \*

Case	Plasma Protein		
	Before Insulin Therapy	During Insulin Therapy	After Insulin Was Omitted
1	6.8	7.5	6.7
2	6.1	6.1	6.8
3	7.6	8.4	7.8
4	6.5	7.8	7.9
5	6.0	7.6	5.9
6	7.5	5.2	7.0
Average	6.9	7.1	6.9

\* The plasma protein is recorded in grams per hundred cubic centimeters.

persons receiving the drug. The plasma protein concentration tended to increase slightly during or after the period of insulin administration.

The red blood cell count showed an increase after the administration of insulin which averaged 400,000

23 Fonseca, Fernando, and de Carvalho, Alberto. Sur le mecanisme de l'action de l'insuline sur la secretion gastrique, *Compt. rend. Soc. de biol.* **96**, 1327 (May 20) 1927.

24 Okada, Seizaburo, Kurumochi, Kwanichi, Tsukahara, Toshio and Oomoue, Tatsu. Pancreatic Function. The Humoneural Regulation of the Gastric, Pancreatic and Biliary Secretions, *Arch. Int. Med.* **43**, 469 (April) 1929.

25 Lueders, C. W. and Watson, M. E. The Effect of Insulin Therapy on Pancreatic Enzymes in Malnutrition, *Arch. Int. Med.* **49**, 330 (Feb.) 1932.

26 Hanner, J. P., and Whipple, G. H. The Elimination of Phenol sulphonphthalein by the Kidneys, *Arch. Int. Med.* **48**, 598 (Oct.) 1931.

cells, and this tended to persist after the drug was omitted

The increases in the circulating blood volume were also noted. The blood volume increased some 400 cc on the average, or more than 10 per cent, during the period of insulin administration, the increase consisting in a proportionate growth of both plasma and cor-

TABLE 6—*The Red Blood Count in Thin Persons Taking Insulin\**

Case	Before Insulin Therapy	During Insulin Therapy	After Insulin Was Omitted
1	4.33	4.78	4.68
2	4.27	4.40	4.67
3	5.31	5.71	5.51
4	4.63	4.96	4.89
5	5.29	5.43	5.1
6	3.94	4.7	4.86
7	3.62	4.07	4.29
Average	4.47	4.87	4.86

\* The red blood cells are expressed in millions per cubic millimeter

puscles. This finding, incidentally, points against edema as having been a significant factor in the gain in weight recorded. The basal metabolic rate was unaffected by insulin or perhaps tended to be slightly decreased by it. The behavior of the basal metabolic rate is of some interest for, in diabetes at least, Campbell and Macleod<sup>27</sup> have demonstrated that insulin tends to increase it.

#### THE BLOOD SUGAR LEVEL IN THIN PERSONS TAKING INSULIN

Apparently there was very little danger from insulin hypoglycemia, even though the blood sugar concentration was not elevated. This was probably due to the fact that the patients ate sufficient food to avoid reactions, or, if mild hypoglycemic symptoms appeared, the

TABLE 7—*The Plasma, Corpuscular and Total Blood Volume in Thin Persons Taking Insulin\**

Case	Before Insulin Therapy			During Insulin Therapy			After Insulin Was Omitted		
	Plasma	Corpuscles	Whole Blood	Plasma	Corpuscles	Whole Blood	Plasma	Corpuscles	Whole Blood
1	2,390	1,260	3,570	2,500	1,535	4,035	2,220	1,420	3,640
2	2,120	1,222	3,342	2,600	1,500	4,100	2,500	1,530	4,030
3	1,450	1,080	2,530	1,700	940	2,640	1,860	1,090	2,950
4	2,320	1,610	4,000	2,660	1,670	4,330	2,410	1,790	4,200
5	2,080	1,020	3,100	2,080	1,120	3,200	2,270	1,140	3,410
Aver	2,112	1,242	3,354	2,308	1,413	3,721	2,252	1,394	3,646

The volumes are recorded in cubic centimeters

patients knew their significance and how to treat them. In one case, the blood sugar level was as low as 62 mg fasting and 65 mg four hours after a large noon meal before insulin treatment. In all cases the fasting blood sugar changed very little during the various periods of observation, as shown in table 9.

#### SUMMARY AND CONCLUSIONS

This paper presents a clinical study of the effect of the subcutaneous administration of insulin in nineteen healthy thin persons. Ten units of insulin, three times a day was the standard dosage of insulin used, a few patients taking somewhat more or less than this amount, and a liberal diet was employed uniformly.

After insulin injections were started, the patients gained weight rapidly and immediately. The increase in weight tended to become less marked as the weight

approached the standard normal weight. In thirteen cases after the omission of insulin the weight remained either constant or continued to increase during periods of subsequent observation, which varied from six weeks to fourteen months. Two patients lost 8 and 5 pounds (3.6 and 2.3 Kg) of the gained weight within six months of the omission of insulin.

Insulin appeared to act as an admirable tonic, all the individuals receiving it feeling much stronger and more active than they had felt previously. Mild hypoglycemic reactions occurred rarely. Local skin hypersensitiveness to insulin appeared in six cases. This finding is striking as compared with the rarity with which skin hypersensitiveness to insulin is seen in diabetic patients receiving the drug. There were no other untoward symptoms.

The gain in weight in thin persons taking insulin is probably due to an increased intake, better digestion and increased assimilation of food. The increase in weight does not appear to be due to water retention, as may occur in certain diabetic patients taking insulin. The relation between the fluid intake and output dur-

TABLE 8—*The Basal Metabolic Rate in Thin Persons Taking Insulin\**

Case	Before Insulin Therapy	During Insulin Therapy	After Insulin Was Omitted
1	0	+2	+5
2	-4	-10	-11
3	-3	-6	-2
4	+8	-4	+5
5	+0	+1	-11
6	-13	-3	-6
7	-2	-5	-14

\* The metabolism is recorded in per cent variation from normal

ing and after the use of insulin was not abnormal, nor did diuresis develop after the omission of insulin.

That insulin increases the appetite and produces an increased ingestion of food is suggested by a study of the nitrogen excretion in the urine. In the cases studied, the nitrogen excretion rose considerably during the period of insulin therapy and then decreased after its omission to near the previous level.

That insulin may increase the absorption and assimilation of food is suggested by a study of phenolsulphonphthalein excretion during the treatment. There was a uniform decrease of from 8 to 27 per cent in the

TABLE 9—*The Blood Sugar Concentration in Thin Persons Taking Insulin\**

Case	Before Insulin Therapy	During Insulin Therapy	After Insulin Was Omitted
1	111	122	102
2	62.00	93	100
3	92	90	80
4	90	85	92
5	80	90	78
6	70	100	87
7	112	94	90

\* The blood sugar concentration is recorded in milligrams per hundred cubic centimeters

excretion in the urine of intramuscularly injected phenolsulphonphthalein during the period of insulin treatment and a return to the original level after the omission of insulin. This was possibly due to an increased excretion of phenolsulphonphthalein in the bile as a result of the stimulation of the flow of bile by insulin, and since the flow of pancreatic juice is similarly stimulated by insulin it is reasonable to assume that increased absorption of food may occur from its employment.

That insulin serves as an admirable tonic physiologically as well as psychologically is suggested by a study of the plasma protein concentration, the red blood count and the circulating blood volume of persons receiving insulin. The plasma protein concentration tended to increase during and after the period of insulin administration. The red blood count showed an average uniform increase of approximately 400,000 red cells, which usually persisted after the omission of insulin. The blood volume also increased perceptibly during or shortly after the use of insulin.

The basal metabolic rate was unaffected or possibly tended to show a slight decrease during or after insulin therapy.

These data record evidence to explain some of the beneficial clinical results that may be obtained with insulin in certain conditions other than diabetes. Because of its varying action on different tissues, insulin may be of considerable value in the management of properly selected cases in which it is desirable to bring about gain in weight. The use of insulin for this purpose appears to be rational and is a simple and safe form of therapy.

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## THE "NORMAL" CARBON MONOXIDE CONTENT OF THE BLOOD

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The ideal normal individual should have no carbon monoxide in his blood, but the average person under ordinary conditions is exposed so frequently to it that it is not possible to regard him as being carbon monoxide free unless procedures are employed which are suitable only for the detection of amounts known to be toxic. It is our purpose to determine to what extent carboxyhemoglobin exists in the blood of presumably normal persons as shown by a precise and delicate method. The literature reveals no record of such analyses.

### CARBON MONOXIDE POISONING

An able review of carbon monoxide poisoning has been compiled by Sayers and Davenport.<sup>1</sup> This review traces the knowledge of "vapor" poisoning from ancient times, lists the sources of carbon monoxide in industry, discusses public and private hazards, portrays the symptoms of poisoning, describes aids to diagnosis and laboratory methods, depicts the pathology of carbon monoxide poisoning, establishes standards of safety, considers preventive measures and methods of treatment, and concludes with a complete bibliography. It is therefore pointless to present comment on the literature here, although it must be noted that our interest lies in concentrations of carbon monoxide smaller than can be detected by methods advocated and used by Sayers. To our knowledge, only two reports have been made on blood approaching concentrations which might be regarded as normal for civilized man. In both instances the persons tested were exposed to obvious sources of carbon monoxide.

Farmer and Crittenden<sup>2</sup> examined the blood of steel mill operatives at the end of a working day, again in the morning as they reported for work, and finally at 4 p.m. that same day. Their results are shown in table 1.

Pilaar,<sup>3</sup> using his modification of the Tervaert method for carbon monoxide, reports nineteen cases in which exposure to carbon monoxide was dependent on driving a car, riding as a passenger, or tinkering with an idling engine. His results vary from negative (two cases) to 1.8 volumes per cent carbon monoxide in the blood. Inadequate ventilation, mechanical defects and the like in motor vehicles are responsible for severe cases of carbon monoxide poisoning. The analyses reported by Pilaar, however, are of definite value in showing the amount of carbon monoxide that may be picked up in "satisfactory" motor contacts.

The persons used as normals in the present investigation were selected at random, effort being made simply to see that they had not been exposed to carbon monoxide just previous to the taking of the blood. When higher results were obtained than were expected, experiments were run on tobacco smoke as the most probable cause of the excess. The literature was then examined for confirmation of the results.

Since the slow combustion of vegetable matter usually releases carbon monoxide, Le Bon's<sup>4</sup> observation that tobacco smoke contained this gas is not surprising. Dudley<sup>5</sup> believed that the heart and nerve disorders were not due to nicotine but to carbon monoxide. Amerson<sup>6</sup> considered that only the inhalation of carbon monoxide from tobacco smoke was dangerous. Jacoby<sup>7</sup> regarded the carbon monoxide as being as dangerous as the nicotine. Much of the older work is stated briefly by Pierre Schruppf-Pierron<sup>8</sup> either in the text or in the comprehensive annotated bibliography. Jacob Meyer found that 1 Gm. of tobacco produced 82 cc. of carbon monoxide. Wahl's<sup>9</sup> analyses showed that tobacco

TABLE 1—The Blood of Steel Mill Operatives

Time	Percentage of Carbon Monoxide Bound by Hemoglobin
4 p.m.	6.26 (average)
8 a.m.	2.11 (0.350)
4 p.m.	7.01 (average)

smoke contains from 1.5 to 4.0 per cent of carbon monoxide and that the smoke expelled contained from 0.7 to 1.2 per cent. From the work of Marcellet<sup>10</sup> it would appear that 1 Gm. of cigaret tobacco produces from 20 to 80 cc. of carbon monoxide, whereas pipe tobacco yields from 53 to 109 cc. As quoted by Schruppf-Pierron, Marcellet asserts that "a smoker who consumes daily 20 Gm. of tobacco in cigaret form absorbs from 400 to 1,600 cc. of carbon monoxide. If the same quantity of tobacco is smoked in a pipe, the dose becomes larger—about 1,600 to 2,200 cc." Fleig,<sup>11</sup> on the other hand, considers the amount of carbon monoxide particularly the amount which the smoker

<sup>2</sup> Farmer, C. J., and Crittenden, P. J. *J. Indust. Hyg.* **11**, 329 (Dec.) 1929.

<sup>3</sup> Pilaar, W. M. M. *J. Biol. Chem.* **83**, 43 (July) 1929.

<sup>4</sup> Le Bon, G. *La fumée du tabac*, Paris, 1872, *Recherches chimiques et physiologiques*, ed. 2, 1880.

<sup>5</sup> Dudley, W. L. *M. News* **53**, 286, 1888.

<sup>6</sup> Amerson, S. S. *Kentucky M. J.* **5**, 29 (Aug.) 1907, abstr.

<sup>7</sup> Jacoby, G. W. *New Yorker med. Monatschr.* **9**, 65, 1897.

<sup>8</sup> Schruppf-Pierron, Pierre. *Tobacco and Physical Efficiency*, A Digest of Clinical Data, New York: Paul B. Hoeber Inc., 1927.

<sup>9</sup> Wahl, F. *Arch. f. d. ges. Physiol.* **88**, 262 and 286, 1899.

<sup>10</sup> Marcellet, H. *Sur le dosage de l'oxyde de carbone en particulier dans les fumées de tabac*, Montpellier thesis, 1907.

<sup>11</sup> Fleig, C., and de Visne, P. *L'oxyde de carbone intervient-il dans l'intoxication par la fumée du tabac?* *Compt. rend. Acad. d. sc.* **146**, 776, 1908.

From the Chemical Laboratory of the Pathological Department, Bellevue and Allied Hospitals and the Office of the Chief Medical Examiner and from the Department of Biochemistry, New York Post Graduate Medical School of Columbia University, New York.

<sup>1</sup> Sayers, R. R., and Davenport, S. J. *Pub. Health Bull.* 195, March, 1930.

actually absorbs, so small as not to play an appreciable part in chronic tobacco poisoning."

According to Toth,<sup>12</sup> 10 Gm of tobacco yield from 2 to 3 cc of carbon monoxide. Baumberger,<sup>13</sup> using more precise methods, reports that cigarettes produce about 83 cc per gram of tobacco smoked. In his opinion, about 61 per cent of the carbon monoxide is absorbed by inhalers. Baumberger, as quoted by Dixon,<sup>14</sup> states that from 72 to 25 parts of carbon monoxide in 10 000 of air exist in the mouth of the cigaret smoker. There is, however, little or no absorption of carbon monoxide from the mouth. Hartridge,<sup>15</sup> asserts that there may be a 6 per cent saturation in the blood of a moderate cigaret smoker. Armstrong<sup>16</sup> ascertained the concentration of carbon monoxide in tobacco smoke under conditions simulating smoking to be cigaret smoke, from 0.5 to 1.0 per cent, cigar smoke, from 6.0 to 8.0 per cent, pipe smoke, from 1.0 up. The amount of carbon monoxide that reaches the smoker's mouth depends on the manner and rate of smoking as well as on the packing of the tobacco. Jones, Yant and Berger<sup>17</sup> carried out rigorous smoking tests under conditions ordinarily not tolerated. Unfortunately, they employed a method (pyrotannic acid) which is not accurate for the concentrations of carbon monoxide that they encountered. The thoroughness of the experiments conducted by the Bureau of Mines was worthy of a precise analytic treatment. They did not find the carbon monoxide content of the blood to exceed 5 per cent saturation. They present analyses of air from cigaret smokers who inhaled (table 2). They found that the average volume of smoke taken into the mouth and lungs during inhalation averaged for twenty-five draws about 60 cc (range from 40 to 80 cc). Persons smoking and inhaling as they worked were unknowingly observed. From the data given in table 3 it will be seen that from 60 to 90 cc of smoke per minute is taken into the lungs. Breathing at the rate of 6 liters per minute, the concentration of carbon monoxide can seldom reach 0.01 per cent in the alveoli of the lungs. Assuming that there are periodic intervals when the content approaches 0.02 per cent, Jones and his associates feel that the carbon monoxide absorbed from tobacco smoke is negligible.

TABLE 2—Percentage of Carbon Monoxide in Exhaled Air

First Portion	Second Portion	Last Portion
0.01	0.03	0.001 or less
0.03	0.03	0.005 or less

The normal healthy adult shows no carbon monoxide symptoms until from 15 to 20 per cent of the hemoglobin is not functioning as a carrier of oxygen. Dixon<sup>14</sup> however notes that certain cigaret smokers exhibit symptoms of mild carbon monoxide poisoning, presumably an idiosyncrasy. It is quite probable that headaches experienced by heavy smokers are due in part to the inhalation of carbon monoxide.

Bogen<sup>18</sup> collected and analyzed all the smoke and fumes from burning tobacco. Figures are given for

mainstream smoke (that drawn through into the mouth) and sidestream smoke (that escaping from the end). The sidestream smoke is rich in carbon dioxide and is alkaline because of its ammonia content. The mainstream smoke is acid and rich in carbon monoxide. The more rapid the smoking, the greater the concentration of carbon monoxide.

From the literature it would appear that tobacco smoke might be a prominent factor in determining the "normal" level of carbon monoxide in the blood. It is highly desirable that a large number of these "normal" values be accumulated so that we may the better evaluate analyses made in industrial cases. This paper is only a step in that direction.

TABLE 3—Inhalations of Smokers at Work

Total Number of Inhalations	Time	Total Number of Respirations
12	11 minutes	1.3
12	8 minutes	1.18

## EXPERIMENTAL

The methods for the quantitative determination of carboxyhemoglobin fall into two groups: (1) those expressing only the relative content, the percentage of hemoglobin combined with carbon monoxide, and suited only for the detection of fairly large amounts of carbon monoxide; (2) those ascertaining the absolute quantities of carbon monoxide as released and measured under standard conditions of pressure and temperature, these methods are suited to the determination of small amounts of carbon monoxide. The results are expressed in cubic centimeters of carbon monoxide, measured at 0°C and 760 mm, released from 1 cc or 100 cc of blood. These figures may be converted into percentage of hemoglobin combined with carbon monoxide by the following procedure. The total hemoglobin of the blood in terms of grams per hundred cubic centimeters is determined. Since 1 Gm of hemoglobin combines with 1.34 cc of carbon monoxide under standard conditions, the hemoglobin found, multiplied by 1.34, will give volumes per cent of carbon monoxide if the blood is completely saturated with the gas.

$$\frac{\text{Volumes per cent CO found}}{\text{CO capacity}} \times 100 = \text{percentage of hemoglobin saturated}$$

The carbon monoxide capacity may be determined experimentally by saturating the blood with carbon monoxide. The calculated value has been shown by Farmer and Crittenden<sup>2</sup> to correspond well with that obtained by analysis.

The Van Slyke and Rabscheit-Robbins<sup>19</sup> method was selected as the best suited to our purpose since the accuracy of the method is given as from 0.02 to 0.03 per cent. We found our error with this method not to exceed 0.04 per cent on analysis of twelve known specimens and on duplicate analyses of unknown specimens.

**Collection and Preservation of Blood for Carbon Monoxide Determinations.**—The most satisfactory anticoagulants are 0.2 per cent potassium oxalate and 0.3 per cent sodium fluoride. With any anticoagulant there is a gradual darkening of the blood on standing. It is most marked with oxalate. There is a slight drop in the carbon monoxide content with oxalate, this is

<sup>12</sup> Toth, Chem. Ztg. 71, 98, 1907.  
<sup>13</sup> Baumberger, J. Pharmacol. & Exper. Therap. 21, 23 (Feb.) 1907.  
<sup>14</sup> Dixon, W. F., Lancet 2, 881 (Oct. 22) 1927.  
<sup>15</sup> Hartridge, H., Proc. Phys. Soc. Jan. 31, 1929.  
<sup>16</sup> Armstrong, H. E., Brit. M. J. 1, 1, 1922 (June 24) 1922.  
<sup>17</sup> Jones, C. W., Yant, W. P., and Berger, I. B., Bureau of Mines Report of Investigations 2519, October 1927.  
<sup>18</sup> Bogen, Emil, The Composition of Cigarette and Cigarette Smoke, J. A. M. A. 93, 1110 (Oct. 12) 1929.

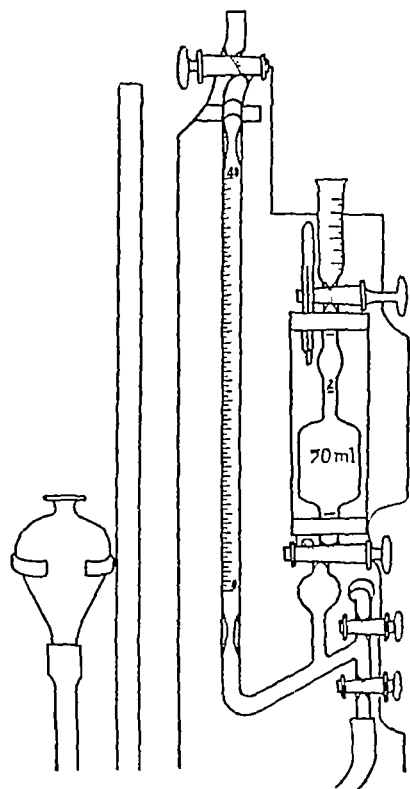
<sup>19</sup> Van Slyke, D. D., and Rabscheit-Robbins, F. S., J. Biol. Chem. 72, 59 (March) 1927.



accentuated by the presence of air. Fluoride is not open to this objection.<sup>20</sup>

*A Modified Apparatus*—The small and much less expensive apparatus made to our sketch by Eimer and Amend consists of a 40 cm manometer, Van Slyke-Neill chamber with a Harington trap, a Shohl trap and an outlet to the leveling bulb, all mounted on a board hinged at the base so as to make shaking by a motor possible. The whole apparatus, excluding the motor, cost somewhat less than \$60. The motor in use is an old one, the parts of which were found lying round the laboratory, but which has been made to function very well.

This apparatus was the result of a description of a modified Van Slyke oxygen apparatus seen in Dr. Shohl's laboratory by Dr. John A. Killian. The only important difference lies in the Harington trap and in the introduction of certain constrictions in the glassware to break the force of the mercury in its movements. On this apparatus all determinations possible with the regular Van Slyke apparatus can be satisfactorily carried out. The advantages of the modified Van Slyke apparatus include the decreased cost, the ready portability and the increased speed in working, owing to the fact that oscillation of the mercury at the time of taking pressure readings is practically negligible. Its disadvantages are the shorter manometer (40 instead of 60 cm) without illuminated background and without provision for a distilled water reservoir as part of the apparatus. The longer manometer is required only for very high concentrations of carbon monoxide. Ingenuity can take care of the other disadvantages.



Modified apparatus for analyses

The modified apparatus was not employed for the analyses on normal blood reported in this paper with one or two exceptions. It was used chiefly for rendering the necessary solutions air free, which was a great saving of time. The time required for the actual test, once the solutions are air free, is about forty-five minutes. Preparing the solutions and making the apparatus ready for the test may and usually do, consume hours. Four hours from start to finish of a single test may be regarded as very good time indeed. The time given by Van Slyke for the test is thirty minutes.

The modified apparatus was not employed for the analyses on normal blood reported in this paper with one or two exceptions. It was used chiefly for rendering the necessary solutions air free, which was a great saving of time. The time required for the actual test, once the solutions are air free, is about forty-five minutes. Preparing the solutions and making the apparatus ready for the test may and usually do, consume hours. Four hours from start to finish of a single test may be regarded as very good time indeed. The time given by Van Slyke for the test is thirty minutes.

Comparison tests run on the two machines are shown in table 4. The only other comparison test run was on the modified apparatus with the normal pooled blood shown. It was ruled out as being unsatisfactory because an had to be admitted to the Harington trap to dis-

lodge material that was clogging the discharge outlet. The blood mixture was kept in the chamber without a mercury seal during the cleaning. The test was then resumed, the result was 0.34 volumes per cent.

Since we wished to compare results on the two types of apparatus, it was decided that the 2 cc mark should be used for all tests. We felt that this would be necessary on account of the short manometer. From

TABLE 4—Comparison Tests Run on Two Machines

Blood	Regular Van Slyke Apparatus	Modified Apparatus
Pooled, gassed	8.51 volumes per cent	8.51 volumes per cent
Pooled, normal	0.22 volumes per cent	0.26 volumes per cent

the comparison figures given, it will be seen that the 40 cm manometer can easily be used even for high carbon monoxide values such as are rarely encountered in the laboratory.

The original directions for the method call for the 0.5 cc mark unless the pressure is over 400 mm. It was found in preliminary tests made for acquiring technique that as good checks were not obtained as expected. In examining all possible sources of error, it was decided to try reading at both levels on each test. The results are found in table 5. It is quite apparent that carbon monoxide breaks away from the cuprous chloride on expanding the gas volume from 0.5 to 2.0 cc and that it is not permissible to take readings at 2 cc except when absolutely necessary.

*Blank Tests*—Two blank determinations were run at different times on the regular Van Slyke apparatus, cooled boiled water being substituted for the blood. The calculations for these follow:

$$\begin{aligned} (10(18.1 - 18.3) + 2.0)F_{CO} &= 0 \\ (10(11.3 - 11.5) + 2.0)F_{CO} &= 0 \end{aligned}$$

Similar tests run on the modified apparatus gave on one occasion a difference of -0.42 and -0.43 cm read at the 0.5 and 2.0 cc marks respectively and on another occasion -0.38 cm for both gas volumes. In the first instance sufficient of the glycerol-salt and cuprous chloride solutions were left over so that 5 cc could be introduced into the regular Van Slyke apparatus.

TABLE 5—Carbon Monoxide Content Calculated from Pressure Readings at Different Volumes on the Same Specimen at Practically the Same Time

Specimen	0.5 Cc Volumes per Cent	2.0 Cc Volumes per Cent
L K	0.22	0.18
O P	0.27	0.20
A K	0.19	0.1
A O	0.23	0.14
H W	0.27	0.10
A G	0.16	0.14
M P	0.22	0.17
Average	0.22	0.11

and the difference in vapor tension noted. This difference was found to be 0.22 cm. It would appear that a correction of 4 mm is required when the modified apparatus is used.

#### EXPERIMENTAL STUDIES

Several groups of persons were selected for study of the carbon monoxide content of the blood. The first group shown in table 6 were taken at random and considered to be normal as far as carbon monoxide was concerned.

<sup>20</sup> Savers, R. R., O'Brien, H. R., Jones, G. W., and Lunt, W. P. Pub. Health Rep. 38, 2005 (Aug. 31), 1921.

It will be recognized that the subjects of table 6 represent those living under urban conditions but exposed to minimal amounts of carbon monoxide. Higher figures would be expected of persons on the street, in motor vehicles, in kitchens or in rooms with gas heaters. Further comment will be made later on these cases, particularly the high ones. It is of interest, however, to compare these results with those obtained in two taxi drivers who had consulted physicians because of "symptoms."

Specimens were obtained from Kings Park State Hospital, Long Island, for comparison with city dwellers. The results are given in table 8.

The results shown in table 8 were nowhere as low as we had expected. Unfortunately, it has been impossible for us to control the conditions under which the

TABLE 6—Persons Living in New York City

Sub-ject	Hemo-globin, Gm. per 100 Cc	Carbon Monoxide Found, Vol-umes per Cent	Carbon Monoxide Capacity, Vol-umes per Cent	Hemo-globin Saturation, per Cent	Comment
A. V.		0.04			Garage mechanic in hospital a week, complaint carbon monoxide poisoning
H. T.	14.6	0.72	19.6	3.2	Laboratory worker after three hours walk on sunny day on city streets, traffic moderate
M. P.	14.2	0.22	18.0	1.22	Gynecologic patient in hospital two days
P. I.	12.8	0.31	17.1	1.81	Child, aged 4 years, pancreatitis lives in country, came to see doctor by railroad and taxi, blood taken at once
P. A.		0.29			Patient in clinic for diagnosis
T. W.	13.5	0.49	20.2	2.4	Diabetic surgical patient in hospital several days on floor above continuous traffic
C. Z.	12.1	0.57	16.2	3.5	Patient arriving in laboratory for sugar tolerance test
S. K.	11.0	0.24	17.42	1.37	Patient in hospital overnight for tolerance test, morning blood
A. C.		0.16			Patient in hospital overlooking Central Park for two weeks
I. A.	16.0	0.29	11.44	1.02	Surgical case in hospital two days
A. K.	14.2	0.10	19.0	1.0	Surgical case, thyroid, prior to operation
A. B.		0.04			Patient coming to laboratory for blood test, duplicate analysis
A. S.		0.2			Clinic patient
I. S.	13.0	0.04	20.10	0.10	Surgical case in hospital one week, duplicate analysis
T. M.	18.6	0.35	24.02	1.04	Visitor to laboratory on arrival
T. M.	18.4	0.30	24.0	1.02	Same as preceding on different day
C. M.	13.1	0.99	20.0	1.0	Blood taken on admission to hospital for surgical treatment
A. S.	13.3	0.81	20.0	4.1	Patient in hospital three days for diagnosis
Average		0.2			

blood was taken or even to ascertain what those conditions were. To explain these figures a critical examination of technique was made and all possible sources of carbon monoxide were looked into.

Blank determinations were again run on the reagents. No error could be attributed to them.

In one instance H. W. it was decided to take pressure readings at both the 0.5 and 2 cc gas volumes. The result by getting the 0.5 cc level promptly was 0.27 volumes per cent of carbon monoxide. On immediately dropping to the 2 cc mark the carbon monoxide was found to be 0.10 per cent. By successively reading at the two levels progressively lower values were obtained. Finally the mercury was dropped to the 50 cc mark and the apparatus shaken by hand for a few seconds. Rising at once to the 2 cc level gave a reading for  $P_2$  2.2 mm greater than  $P_1$ , which is negative for carbon monoxide. Elevation to the 0.5 cc mark

resulted in a carbon monoxide of 0.04 per cent which approaches the error of the method. This behavior would seem to indicate that the gas combined with the cuprous chloride was carbon monoxide.

There appeared to us to be two ways in which these persons living in the country might themselves produce carbon monoxide: (1) in the gastro-intestinal tract, and (2) by inhaling tobacco smoke. Experiments were carried out in both directions, and the results are interesting if not conclusive.

Proof that the intestinal tract is not the site of formation of minute, though perhaps constant, amounts of

TABLE 7—Taxi Drivers (New York City)

Driver	Carbon Monoxide Found, Vol-umes per Cent	Hemoglobin Saturation, per Cent	Comment
M. M.	4.33	10.0	
M. E.	1.04	10.5	2/ 3/31
	1.06	10.5	2/11/ 1
	3.13	17.0	2/18/31
	1.47	8.0	3/11/31

carbon monoxide would be rather difficult and is entirely beyond the scope of this paper. Circumstances, however, placed at our disposal an unusually active strain of *Bacillus welchii* taken from an abdominal wound of a patient in the hospital. This organism was grown on dextrose broth. Boiled milk in a large test tube (from 80 to 100 cc) was inoculated with this culture. A sterile 2 mm glass tube was inserted just below the level of the milk, a petrolatum seal was poured in and the test tube plugged with cotton. The glass tubing had previously been bent to form a V so that the other end could be inserted into a small test tube (20 cc) containing from 6 to 7 cc of blood. The tubing ended just below the level of the blood. The tubing had been fitted with a cork so that the test tube could be well closed off. It was sealed with collodion because the incubator used was gas heated and any exposure of the blood to the air

TABLE 8—Persons Living in the Country

Subject	Carbon Monoxide Found, Vol-umes per Cent	Carbon Monoxide Capacity, Vol-umes per Cent	Hemoglobin, Gm. per 100 Cc	Hemoglobin Saturation, per Cent
I. B.	0.14	21.71	16.2	0.64
S. C.	0.17	24.49	18.2	0.69
A. C.	0.17	24.12	18.0	0.70
S. A.	0.10	20.37	15.2	0.43
S. F.	0.32	22.78	17.0	1.40
F. H.	0.09	22.09	16.5	0.49
S. S.	0.17	21.44	16.0	0.79
J. C.	0.61	21.57	16.1	2.82
F. R.	0.16	18.09	13.5	0.88
H. W.	0.27	19.16	14.1	1.40
J. F.	0.64	17.69	13.2	3.61
N. M.	0.15	18.22	13.6	0.71
Average	0.24			

there would have interfered with the test. The culture was incubated at 37 C for twelve hours. During that time about 50 cc of gas was produced. This was bubbled over into the blood by placing the culture tube in a hot water bath (steam heated), the cork in the blood tube being loosened. The gas expanded and passed over, this was assisted by the melting of the petrolatum plug which gradually fell to the milk level. The gas was driven over at about a bubble a second. The blood had been previously analyzed for carbon monoxide, the result being 0.17 volumes per cent. The exposed blood showed a carbon monoxide content of 0.21 volumes per cent. It must be borne in mind that

the incubated blood, as judged by its color change, had undergone some decomposition as a result of the heat. The increase of 0.04 per cent is of little significance since it is practically within the limits of experimental error given by Van Slyke for the method (from 0.02 to 0.03 per cent).

While *B. welchii* cannot be taken as typical of organisms found commonly in the intestinal tract, the chance to examine the gas formed by it was not to be ignored. Several bacteriologists consulted were of the opinion that carbon monoxide was not produced in the intestinal tract. While the chief gases formed are undoubtedly carbon dioxide, hydrogen, hydrogen sulphide and nitrogen, it is known that small amounts of other gases are released, and it is at least conceivable that a trace of carbon monoxide, though hardly more, may be present. It was suggested that meat broth might be a more suitable medium for producing carbon monoxide under bacterial action. We feel justified, however, in assuming that carbon monoxide absorbed from the gastro-intestinal tract cannot account for the unexpectedly high values encountered in table 8.

It seemed much more likely to us that tobacco smoke would contain sufficient carbon monoxide to produce detectable amounts of carboxyhemoglobin. The possibility was tested out by exposing blood to cigaret smoke. A 10 cc graduated pipet was cut off so as to form a cigaret holder about 7 inches long. This was connected by the smallest amount of rubber tubing to a 250 cc gas-washing Drexel bottle (tall form with ground-glass stopper), and this in turn to a tall cylinder (125 to 150 cc) fitted with a bulb-end aerating tube (part of the nitrogen aerating apparatus) which contained from 18 to 20 cc of blood. Air was drawn through this as slowly as possible. The distance from the cigaret to the blood was greater than that from the mouth to the lungs. The tobacco oil and tar settled to a large extent in the pipet holder and Drexel bottle. The same blood was used for this experiment as for the bacteriologic one. The control blood and aerated specimen were analyzed on the same evening, sufficient glycerol-salt and cuprous chloride solutions having been rendered air free at the start so that these solutions would be identical in the two analyses. The exposed blood showed a concentration of carbon monoxide of 0.63 volumes per cent as compared to the control figures of 0.17 per cent. Hemoglobin determinations were made on both to be certain that the blood was properly mixed before separation. Two tests were made with the "smoking apparatus" to see whether ammonia was present in interfering amounts. Nessler's solution gave no change in color.

As a result of this experiment, the literature was examined for observations on the carbon monoxide content of tobacco smoke. Our suspicions were amply confirmed.

Nothing is known regarding the tobacco factor in the analyses reported in tables 6, 7 and 8 except in three instances. H. T. (0.73 volumes per cent) later recalled having consumed five cigarets during his three hours' walk. J. M. was suffering from overindulgence in tobacco and was under the doctor's orders to smoke very little. He had had a cigaret about two hours previous to the finding of 0.36 volumes per cent in his blood. He returned at a later date for another test. Unfortunately, as he reached the laboratory, he encountered some one he especially wished to see. They conversed for some minutes in a small room while the

friend busily smoked a cigar. The blood finding on the outsider was 0.30 volumes per cent. He was then sent out on the roof (sixth floor) to smoke a cigar. After about half an hour his carboxyhemoglobin was 0.35 volumes per cent. The blood of A. S. had been selected at random from a basket of routine specimens for a demonstration of the carbon monoxide test. When the blood was found to contain 0.84 volumes per cent, the patient's chart was examined and no information of value obtained. On questioning, the patient who had been in the hospital for three days, admitted that just before his blood had been taken he had had a cigaret. It will be seen that the two highest values reported in table 6 were obtained on blood from persons known to have been smoking shortly before the blood was taken.

We then attempted to discover under what conditions the persons reported in table 8 worked and lived. The information obtained is given in table 9.

TABLE 9—Occupation and Exposure to Smoke of Persons Reported in Table 8

Subject	Carbon Monoxide Found, Volumes per Cent	Occupation Exposure to Tobacco Smoke
I. B.	0.14	Working in ward for six weeks, smokes two packs of cigarets a week.
S. C.	0.17	Working on lawn squad for six months, never smokes.
A. C.	0.17	Cutting grass for three months, smokes a pack of cigarets a day, if he has opportunity.
S. A.	0.10	Working in ward for two weeks, smokes a pipe or cigarets continuously, lighting one cigaret with previous one whenever he has the chance, smoking not allowed in ward.
S. F.	0.32	Working in ward three months, also in occupational therapy class, smokes pipe three or four times daily and oftener if he has opportunity.
F. H.	0.40	Working in ward nearly six months, does not smoke and does not go out when others go out for a smoke, this ward is close to power house and, if the wind is right, smoke reaches the ward.
S. S.	0.17	Works on boulevard keeping road in repair, does not smoke, but associates with smokers.
J. C.	0.61	Working in laundry for six months, smokes pipe at every opportunity and usually carries it in his mouth even when he is not smoking.
F. R.	0.16	Working on lawn squad for two weeks, smokes more than a pack of cigarets a day, smokes constantly during day when he can.
H. W.	0.27	Working in ward for two weeks, cigarets, four or five daily.
J. F.	0.64	Working in linen room for three weeks, pack of 20 cigarets lasts two and a half days.
N. M.	0.13	Works in occupational therapy class, is mute, does not smoke, may be exposed at times but not often.

There is no consistent variation of the carbon monoxide concentration of the mental cases reported in table 9. Obviously the amount of carbon monoxide in the blood is a continually varying figure and dependent largely on the immediate surroundings, since on exposure to pure air it rapidly leaves the blood. These specimens were obtained early in the morning at a time when an occasional smoker might have just finished a cigaret, whereas a confirmed smoker may have had nothing since the night before. Table 9 emphasizes the necessity of knowing precisely to what the individual has been exposed at the time the blood is taken; otherwise, it is impossible to evaluate the results.

It was felt that the best way to determine approximately how much carbon monoxide was picked up by the pedestrian on a city street was to examine the blood of street cleaners as they quit work at the end of the day. These are superior to traffic policemen in that they are on the edge of the traffic, not in the middle of it. Twelve men reported to the laboratory (Second Avenue at Twentieth Street) as they came off duty

(from 3 30 to 4 30 p m) after having been on the streets since 6 30 in the morning. Some came without changing their uniforms. While the ideal thing to do would be to take the blood from the men on the street, such a procedure has several drawbacks. The men cooperated very well and answered all questions put to them without reservation. The results are shown in table 10.

The average for this group of men is considerably greater than that of any other tested by us. It is worth noting, however, that the lowest values are shown by nonsmokers or by those smoking a pipe early in the day. J M, whose carboxyhemoglobin is scarcely above the average of those at Kings Park Hospital, Long Island, works on an avenue with an elevated railway over it, where the traffic is reasonably dense and com-

are inclined to believe that smoking is apt to be the most conspicuous factor in determining the carboxyhemoglobin of an individual under normal conditions when he is not exposed to obvious high percentages of carbon monoxide.

#### SUMMARY

1 The average content of carbon monoxide in the blood of eighteen persons living in New York City under conditions of minimal exposure was found to be 0.27 volumes per cent. This represents about 10 to 15 per cent of the hemoglobin combined with carbon monoxide.

2 The average content of carbon monoxide in the blood of twelve persons confined to a state institution in an ideal rural locality was found to be 0.24 volumes per cent. Most of these showed a hemoglobin saturation of less than 1 per cent.

3 The average content of carbon monoxide in the blood of twelve New York City street cleaners was found to be 0.69 volumes per cent. This represents about 3 per cent saturation of the hemoglobin with carbon monoxide.

4 Two taxicab drivers were found to have on several occasions a carbon monoxide content ranging from 1.47 to 4.33 volumes per cent. This represents a hemoglobin saturation of 80 to 190 per cent.

5 Tobacco smoking appreciably increases the carbon monoxide in the blood and cannot be ignored in the interpretation of laboratory results.

303 East Twentieth Street

## ACCIDENTAL SODIUM FLUORIDE POISONING

### REPORT OF EIGHT CASES, WITH ONE FATALITY

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Sodium fluoride is widely employed as an insecticide. It is the chief constituent of most "roach powders." It is dispensed in drug stores, grocery stores and department stores without any indication that it is a deadly poison. Because it is dispensed in containers similar to those used for saline laxatives or baking powder, it is often mistaken for these substances, with disastrous results. Insecticides containing sodium fluoride are commonly stored in medicine cabinets or kitchen cupboards.

It is apparent that considerable ignorance exists among druggists and laymen in general regarding the toxic properties of sodium fluoride. Many physicians do not appreciate the importance of this problem largely because of the scant information contained in modern textbooks relative to the toxicology of sodium fluoride. Furthermore, the statements contained in some standard textbooks are incorrect, in the light of present knowledge. The 1923 edition of one widely used textbook on toxicology<sup>1</sup> states: "In man no fatality from sodium fluoride has been reported." The paucity of reports in medical literature does not necessarily indicate that fluoride poisoning is of infrequent

From the Diagnostic Laboratories of the Miami Valley Hospital.  
1 Peterson F. Haines W. S. and Webster R. W. Legal Medicine and Toxicology, ed 2 Philadelphia W. B. Saunders Company 2-1-1923

TABLE 10—Persons Working on New York City Streets

Subject	Carbon Monoxide Found Volumes per Cent	Hemoglobin Cm per 100 Cc	Hemoglobin Saturation per Cent	Location and Type of Work
J C	0.59	15.4	4.3	Times Square routine smokes pipe cigars cigarettes smoked on way over
J M	0.25	15.8	1.2	1st Ave 14th 20th St routine does not smoke
J H C	0.77	16.6	7.0	Came from Bronx after 10 hours sleep, going on duty smoked six cigarettes on way to laboratory
M C	0.35	16.1	1.3	F 30th St routine smoked pipe in morning
J C	0.64	16.0	3.0	54th St 10th 11th Ave supervised men cleaning off empty lot smokes 15-20 cigarettes a day smoked on way over
J V	0.50	15.2	4.0	42d St, 1st 2d Ave routine smokes about ten cigarettes a day smoked on way over
J C	0.77	15.9	2.0	W 34th St routine smoked pipe in morning
M O C	1.44	15.5	6.0	31st-34th St 6th Ave W worked at loading truck engine running smoked 20 cigarettes a day had two while waiting in laboratory to have his blood taken (by request)
J N	0.10	15.2	3.4	2d St 9th 11th Ave routine smokes pipe cigars smoked half a cigar just before taking of blood (by request)
S C	0.92	13.7	5.0	F 4th St routine smokes 10 cigarettes a day none for hour before taking test
J R	0.20	15.0	1.4	W 7th St routine does not smoke
J J M	0.85	15.4	4.3	4th 4th St 5th Ave routine smokes 12-18 cigarettes a day also pipe smoked cigarette on way over
Average	0.69			

posed largely of trucks, which produce more carbon monoxide than pleasure cars. This man had less than a block to walk from his work to the laboratory. He came in his working clothes. Consequently we have every reason to believe that he, of all the street cleaners, should show the greatest amount of carbon monoxide in his blood if the chief source of it is motor traffic. On the contrary, he has the lowest carboxyhemoglobin of the group. The one man who had not yet been on duty, J H C, shows more carbon monoxide, 0.77 per cent, than the average for the group, 0.69 per cent. The actual route he took to the laboratory from the Bronx was as follows: subway to Thirty-Third Street, walked to Twenty-Eighth Street and Tenth Avenue, climbed in, walked to Sixth Avenue and took trolley car to within a couple of blocks of the hospital. During the time he walked he consumed six cigarettes. It will be seen that his blood contains three times as much carbon monoxide as a man who had spent his whole day on the street but had not smoked. From this we

occurrence. Because of the general misconception regarding the toxic properties of sodium fluoride it seems quite probable that many cases of accidental poisoning with this compound have passed unrecognized.

Our purpose in this communication is to report eight cases of accidental acute sodium fluoride poisoning which were encountered in the Miami Valley Hospital within a period of one month. One patient died, the other seven recovered. The fatality resulted from the accidental substitution of roach powder for epsom salt. The epsom salt and the sodium fluoride containers were almost identical in appearance and size and had been placed side by side in the medicine cabinet. The seven nonfatal cases occurred in one family in which roach powder was accidentally substituted for baking powder in the preparation of biscuits.

Stanton and Kahn<sup>2</sup> in 1915 described what they regarded as the first reported instance of sodium fluoride poisoning. A baby, aged 19 months swallowed some of "Peterman's Roach Food," which contained from 40 to 50 per cent of sodium fluoride. The early recognition of the source of the child's resulting illness and the early institution of gastric lavage with large quantities of lime water and calcium chloride resulted in a favorable outcome. In 1899, Herbert B. Baldwin<sup>3</sup> a chemist, reported on the toxic action of sodium fluoride. He told of the accidental substitution of roach powder for baking powder in the preparation of pancakes. The pancakes were eaten for breakfast by six or seven persons. All ate sparingly of the pancakes except one man, who ate three or four of them. All who had eaten the pancakes vomited within from five to fifteen minutes, the man who ate the largest number of pancakes died early in the evening of the same day. Criminal poisoning was suspected until it was discovered that a box of roach powder occupied a position adjacent to a box of baking powder in the cupboard. Sufficient sodium fluoride was recovered from the tissues to etch strongly a piece of glass. While carrying out the chemical investigations of these cases, Baldwin learned of an almost identical accident in another city, in which sodium fluoride was accidentally substituted for baking powder in preparing wheat cakes. The four persons who ate the wheat cakes experienced nausea, vomiting, intestinal cramps and, in one instance, persistent diarrhea. After several days of prostration, all recovered. Baldwin mentions another case of a man who, while intoxicated, mistook sodium fluoride for Rochelle salt (potassium and sodium tartrate). Violent vomiting and purging followed, but the patient recovered within a few days.

Schwyzer,<sup>4</sup> in 1901, recorded an instance of acute fluoride poisoning in a man, aged 38, who had consumed large quantities of beer containing sodium fluoride. Fluoride was recovered from the urine and blood. Hickey,<sup>5</sup> in 1911, reported the death of a 10 year old girl who was given one teaspoonful of sodium fluoride which had been mistaken for Rochelle salt, the girl died in one hour. Hickey also describes two instances of sodium fluoride poisoning in a man and wife who were severely poisoned following the ingestion of what was thought to be Rochelle salt. Chemical

analysis of the Rochelle salt revealed the presence of large amounts of sodium fluoride. Further investigation showed that the poison was obtained from an artists' supply store. Two barrels were found in the same room, one containing sodium fluoride and the other Rochelle salt. Vallee<sup>6</sup> recorded the poisoning of a family of seven persons who had eaten pastry containing sodium fluoride, all recovered.

In 1923 Bizot<sup>7</sup> reported a fatal case of sodium fluoride poisoning in a man who had taken a teaspoonful of the compound mistaking it for Rochelle salt. He experienced severe epigastric pain within five minutes followed immediately by severe vomiting, diarrhea and prostration. He was given a glassful of lime water with immediate temporary relief of the gastro-intestinal symptoms, but he continued for some time to have painful spasmodic contractions of the arms and legs. Two and one-half hours after the ingestion of the sodium fluoride the stomach was washed with lime water, the symptoms were again relieved. Nin hours after the ingestion of the compound the patient suddenly died.

McNally<sup>8</sup> reported the deaths in three accidental cases and one suicidal case in Chicago, following the ingestion of sodium fluoride. One woman used an unknown amount of roach powder in place of starch in the preparation of an omelet. She died during the evening of the same day. Necropsy revealed multiple small hemorrhages in the congested and edematous gastric mucosa. Chemical analyses revealed the presence of sodium fluoride in the tissues. Two sisters mistook sodium fluoride for a laxative powder, one died four hours after the poison was taken. The other sister took some of the same powder as a laxative some six weeks after the death of her sister. Death occurred in three quarters of an hour. The body of the first sister was exhumed and a chemical analysis of the organs revealed large amounts of sodium fluoride. Chemical analysis of the stomach, liver, kidneys and bowel of the second sister also revealed large amounts of sodium fluoride. The white powder in a wrongly labeled bottle was found to contain 90 per cent of sodium fluoride. The fourth fatality occurred following the ingestion of two teaspoonfuls of rat poisoning, with suicidal intent. Chemical analysis of the stomach tissue gave positive tests for sodium fluoride.

Dyrenfurth and Kipper<sup>9</sup> report a case of fatal poisoning with a fluoride compound contained in a vermin exterminator. Fullerton<sup>10</sup> reports the fatal fluoride poisoning of a man, aged 76, who mistook sodium fluoride for epsom salt, both of which were kept on a pantry shelf. The physician, who arrived within one hour of the accident, found the words "sodium fluoride put with salt for ants" on the carton. He immediately telephoned to the place of purchase to inquire regarding the proper antidote. He was informed, "There is no antidote, and it is not poisonous except in large doses." The patient experienced nausea, vomiting and cramp-like pains in the legs and fingers. He died during the evening of the same day. Autopsy was not obtained. The contents of the container were subjected to chem-

<sup>2</sup> Stanton, J. N. and Kahn, Max. Sodium Fluoride Poisoning, J. A. M. A. **64**: 1985-1986 (June 12) 1915.

<sup>3</sup> Baldwin, H. R. The Toxic Action of Sodium Fluoride. Trans. Am. Chem. Soc. **21**: 517-521, 1899.

<sup>4</sup> Schwyzer, F. Chronic Fluorine Poisoning. New York M. J. **24**: 16 (July 6) 1901.

<sup>5</sup> Hickey, Bull. Massachusetts Board of Health 1911, p. 341 (cited by McNally, footnote 8).

<sup>6</sup> Vallee, C. Nonfatal Poisoning by Sodium Fluoride. J. de pharm. et chim. **21**: 58, 1920.

<sup>7</sup> Bizot, A. R. Sodium Fluoride Poisoning. Kentucky M. J. **22**: 16-159 (May) 1924.

<sup>8</sup> McNally, W. D. Four Deaths Caused by Sodium Fluoride. J. A. M. A. **81**: 811-813 (Sept. 8) 1923.

<sup>9</sup> Dyrenfurth, F. and Kipper, Friedrich. Fluorine Poisoning. Mel. Klin. **21**: 846-848 (June 5) 1925.

<sup>10</sup> Fullerton, W. W. Two Rather Uncommon Fatal Cases of Poisoning. New England J. Med. **203**: 423 (Aug. 28) 1930.

ical analysis which revealed that the substance was sodium fluoride.

The reports of the chief medical examiner of the city of New York contain records of three accidental deaths from sodium fluoride poisoning in 1918-1920, two accidental deaths in 1925, one accidental and one suicidal death in 1926, one accidental death in 1927, three in 1928, one in 1929, and six in 1930.

Sodium fluoride is widely used in the arts as an insecticide, wood preservative, food preservative and for the etching of glass. Hydrofluoric acid has caused many serious cases of fluoride poisoning, with several deaths. Sodium fluoride (NaF) exists as a white powder crystallizing in colorless cubes. It possesses an acid bitter taste and is soluble one part in twenty-five parts of water. It is a general protoplasmic poison, exerting a strong local irritant action on mucous membranes. When given in small amounts, fluorides are readily absorbed and deposited as calcium fluoride in the bones. Small amounts of fluoride are normally found in the bones and teeth. Traces of fluoride are normally found in the organs and body fluids.

Chronic fluorine poisoning is recognized as an important industrial hazard in France, Japan and Switzerland, where fluorine and its salts are used extensively in the manufacture of glass, paint, aluminum, parasitocides, food preservatives, in the tanning industry and in chemical laboratories. Largely owing to the researches of Cristiani,<sup>11</sup> it has become increasingly apparent in Europe that the continued ingestion of small quantities of the salts of fluorine, or the inhalation of its acids, produces in animals and in man a somewhat characteristic clinical state, evidenced by slowly progressive cachexia, anemia, fragility of the bones with spontaneous fractures, stiffness of the hands, and respiratory paralysis in the fatal cases. Since the same exposures exist in many American industries, it seems quite probable that cases of chronic fluorine poisoning may have escaped recognition.

#### REPORT OF CASES

**FATAL CASE—History.**—Mrs E. B. aged 39 a housewife, was admitted to the receiving ward of the Miami Valley Hospital at 10 15 a. m., Sept 8 1931, in a state of profound shock, with a peculiar grayish blue cyanosis of the skin and mucous membranes. The history, related by her husband, revealed that the patient arose from bed at 6 o'clock of the same morning. She went at once to the medicine cabinet and withdrew a round pasteboard container thinking it to be epsom salt (magnesium sulphate). She took a heaping tablespoonful of this powder in a glass of water. Immediately after swallowing the mixture she complained of a burning bitter taste in her mouth, followed almost immediately by marked nausea and violent vomiting and retching. The husband, knowing of her natural dislike for the taste of magnesium sulphate, gave little heed to her complaints. About half an hour later the patient experienced diarrhea which was followed by many similar liquid bowel movements. The husband gave her molasses by mouth which afforded her no relief. She became prostrated and was moved to her bed. The husband asked her repeatedly whether she was sure she had taken epsom salt and she persisted in her assertion that she knew epsom salt when she saw it.

On the advice of neighbors the husband prepared an infusion of peach tree leaves which he administered to his wife, without relief of symptoms. The vomiting and diarrhea progressed to an alarming degree and the husband became suspicious for the first time that she may have taken something other than magnesium sulphate. He discovered the box of roach powder

labeled "Sodium Fluoride for Roaches," in the place ordinarily occupied by the box of magnesium sulphate. The two containers were practically identical and were ordinarily kept side by side in the medicine cabinet. There was no statement on the sodium fluoride container to indicate that the contents were poisonous. On discovering that his wife had taken roach powder by mistake, Mr. B. walked to the police station and reported the incident. His wife was immediately brought to the hospital in an ambulance, some four hours and fifteen minutes after the ingestion of the sodium fluoride. Because of the history, a stomach tube was inserted and the stomach washed with several liters of lime water (liquor calcis). Ten cubic centimeters of calcium chloride (10 per cent) was given intravenously. Large amounts of lime water were introduced every half hour into the stomach and duodenum through a gastroduodenal catheter inserted through the nose.

The patient's general condition appeared to improve quite rapidly. At 1 p. m., while talking in a rational manner to the nurse, she suddenly experienced a generalized convulsion, became extremely cyanotic, passed urine and feces involuntarily and died of respiratory paralysis within two minutes. Injections of caffeine sodiobenzoate and epinephrine were of no avail.

**Autopsy.**—The body was that of a well developed, well nourished woman. The skin showed deep grayish blue cyanosis most marked over the scalp, face, neck, upper thorax and upper extremities. The skin of the vulva, the perineum and the inner aspects of the thighs for a distance of 15 cm. below the perineum showed marked grayish discoloration, apparently produced by the fluoride content of the urine. The buccal and pharyngeal mucous membranes and the mucosa of the vagina, labia minora and the inner aspect of the labia majora showed similar bluish gray discoloration. Examination of the thoracic organs revealed no abnormalities other than abundant persistent thymic tissue and extreme passive congestion of the heart and lungs with moderate terminal pulmonary edema. The gastric mucosa and submucosa showed extreme acute passive congestion and edema with multiple pin-head to match-head size petechiae, the mucosa was covered with a thick layer of blood-tinged mucus. There was no evidence of erosion or ulceration of the gastric mucosa. The lower third of the esophagus showed similar changes. The duodenal mucosa showed more extensive petechial hemorrhages of the mucosa and submucosa, many of which were confluent, producing irregular areas varying from 1 to 3 cm. in diameter. The upper third of the small intestine showed extreme acute passive congestion and edema with scattered petechial hemorrhages, much less marked than in the duodenum. The liver was of deep slate-purple with mottled grayish yellow areas, presenting the characteristic appearance of extreme acute passive congestion with advanced cloudy swelling and patchy fatty degenerative infiltration. The kidneys showed extreme acute passive congestion and diffuse cloudy swelling. The mucosa of the urinary bladder showed extreme acute congestion with scattered small petechiae. Microscopic examinations confirmed the gross observations.

The pathologic diagnosis was: Accidental sodium fluoride poisoning (accidental ingestion of sodium fluoride dispensed as "roach powder"). Extreme passive congestion and edema, with petechial hemorrhages, of gastric, duodenal and jejunal mucous membranes. Extreme passive congestion, with grayish blue discoloration of buccopharyngeal and vaginal mucous membranes and skin of inner aspect of thighs. Grayish blue cyanosis of skin most marked over scalp, face, neck, upper part of the thorax and upper extremities. Extreme acute passive congestion of all organs. Terminal pulmonary edema. Advanced cloudy swelling of liver and kidneys. Healed pulmonary and bronchial node tuberculosis. Early atherosclerosis of the aorta. Left parovarian multilocular cystadenoma. Old adhesive pleuritis.

Chemical analysis<sup>12</sup> of the compound in the cardboard container taken from the medicine cabinet revealed approximately 90 per cent sodium fluoride. Strongly positive qualitative tests for sodium fluoride were obtained from the stomach, duodenum, liver and kidney tissue. Quantitative analyses revealed 0.21 Gm. of sodium fluoride per hundred grams of stomach tissue, 0.185 Gm. per hundred grams of liver tissue, and 0.12 Gm. of sodium

<sup>11</sup> Cristiani, H. Detection and Prevention of Fluorine Poisoning. *Lancet*, 5, 585-590 (May 2) 1931. Cristiani, H. and Chausse, P. Fluorine Poisoning from Small Doses of Sodium Fluoride Compound. *Deutscher Monatsschrift für Medizin*, 4 (April 1) 1932.

<sup>12</sup> The authors are indebted to Carl McD. Ritter, B.S., Ph.D., for cooperation in the chemical analyses.



## CONCLUSIONS

1 A series of immunotransfusions five nonspecific and one specific, was given a patient with a proved hemolytic streptococcus septicemia. Following the

TABLE 2—Course of Disease

January 4	Blood culture, hemolytic streptococcus
January 7	Blood culture, hemolytic streptococcus
January 13	First immunotransfusion (nonspecific) of 250 cc. of citrated blood, no reaction
January 15	Patient's opsonic index found to be 0.8, second immunotransfusion (nonspecific) of 250 cc. of citrated blood, severe chill
January 19	Third immunotransfusion (nonspecific) of 200 cc. of citrated blood, no reaction
January 23	Blood culture, sterile
January 30	Fourth immunotransfusion (nonspecific) of 280 cc. of blood by direct method, severe chill
February 3	Titer of patient's serum vs infecting organism, 1:40
February 4	First tooth extraction, recurrence of joint pains, culture of tooth, yielding hemolytic streptococcus
February 5	Blood culture, hemolytic streptococcus
February 10	Fifth immunotransfusion (nonspecific) of 300 cc. of blood by direct method, severe chill
February 12	Blood culture, sterile
February 19	Titer of patient's serum vs infecting organism, 1:320
February 25	Blood culture, sterile
February 26	Autogenous vaccine, 50 million organisms by vein
March 4	Autogenous vaccine, 100 million organisms by vein
March 9	Autogenous vaccine, 150 million organisms by vein
March 10	Patient discharged from hospital
March 16	Second tooth extraction, no reaction
March 23	Third tooth extraction, no reaction
April 21	Final check up examination condition good

third transfusion, a blood culture was found to be sterile and the patient was clinically improved. Subsequently a diseased tooth was extracted, and a culture from its roots yielded hemolytic streptococcus. At once the symptoms of polyarthrititis, chills and fever recurred,

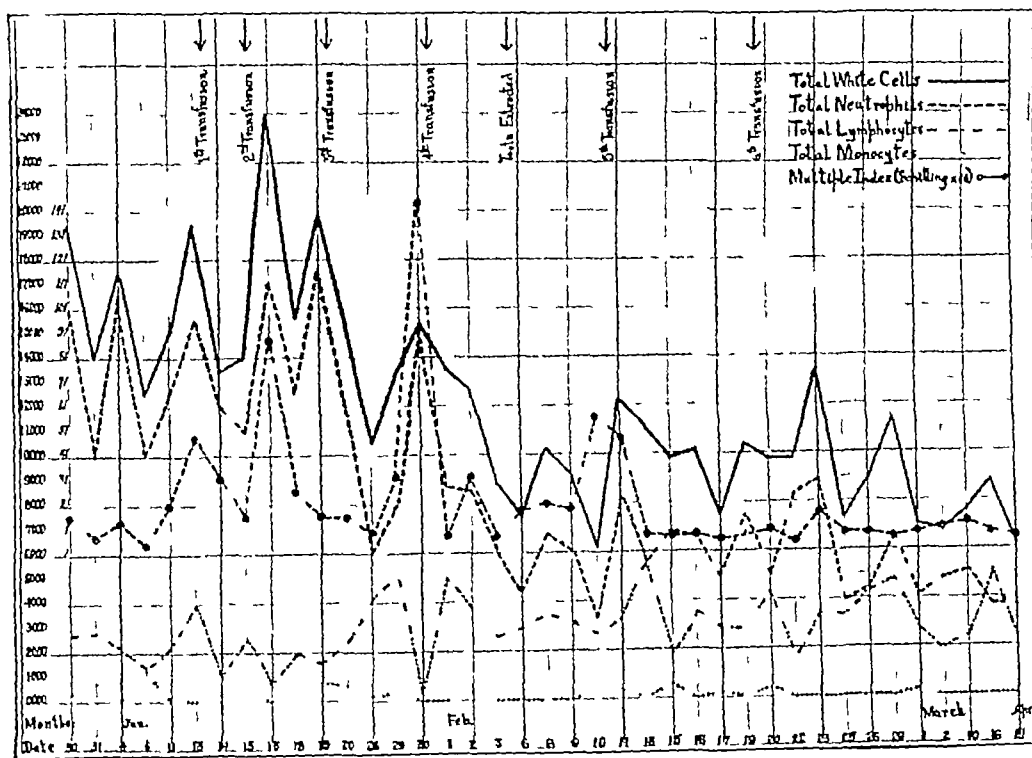


Chart 5—Summary of blood changes presented graphically

and the blood stream again showed hemolytic streptococcus in pure culture. Following the fifth (nonspecific) and sixth (specific) immunotransfusions, the blood culture was persistently negative and the patient in good health.

2 A detailed check on the blood picture before and after each transfusion by means of the Schilling method suggests that the transfusions were responsible for definite and measurable increase in the defense mechanism.

3 Though with such brief experience no sweeping claim is warranted, the value of nonspecific immunotransfusions in this case of septicemia seems sufficient to justify wider experiments in the application of this form of therapy.

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## IMMUNOTRANSFUSION IN SCARLET FEVER

J. E. GORDON, PH.D., M.D.

DETROIT

Present-day scarlet fever in the United States is a relatively mild disease. In certain sections of the world, notably the Balkan countries and northern China, the fatality continues high. In most parts of Europe and in the United States the case fatality rate ranges from one death per hundred reported cases to perhaps three or four among hospital patients. In general, the days no longer exist when from 6 to 10 per cent of cases terminate fatally.

Under present conditions, a further decrease in the number of deaths can seemingly be best accomplished by centering attention on patients who are critically ill. That effort might well reflect more strongly on the general death rate than would refinement in methods applicable to all patients, because so many mild illnesses terminate favorably under any circumstance.

The method of immunotransfusion has been developed with this in view. In certain unusual circumstances it is believed to have merit as an emergency method not possessed by other procedures. A comprehensive clinical experience indicates that it has materially reduced the fatality rate among hospital patients.

Favorable evidence has accumulated regarding the value of the transfusion of blood in acute infectious diseases. If the element of specific immunity can be added to the beneficial effect of simple transfusion, the results should be even better. This principle was first advanced by Wright,<sup>1</sup> who practiced transfusion of blood from donors previously immunized with bacterial vaccines. He applied the term immunotransfusion to the procedure. Since naturally acquired immunity in man is of higher grade than that artificially induced, persons recently recovered from a specific infectious disease should theoretically be more satisfactory as immune donors.

Occasional scattered case reports represent the literature of this procedure in scarlet fever. The method was apparently first used for typhoid.<sup>2</sup> Scarlet fever is

This study has been aided through a grant from the Commonwealth Fund of New York.  
From the Herman Kiefer Hospital and the Division of Epidemiology, Department of Health.  
<sup>1</sup> Wright, A. E. *Lancet* 1:489 (March 29) 1919.  
<sup>2</sup> Snow, I. M., and Fairbairn, J. F. *Arch. Pediat.* 10:1 (Jan) 1923.  
<sup>3</sup> Clemens, J. *Med. Klin.* 25:1021 (June 28) 1929.  
Abram, P., and Tzanck, A. *Paris med.* 2:104 (Aug 1) 1931.  
<sup>4</sup> Schottmüller, H. *München med. Wochenschr.* 73:1735 (Oct 15) 1926.  
Hansch, G., and Hartmann, E. *Deutsche med. Wochenschr.* 53:2017 (Nov 25) 1927.

not a stable disease nor is any communicable disease for that matter. Long continued observations are therefore necessary to determine the worth of any therapeutic measure. This requirement has been met in that transfusion of whole unaltered blood from persons recently recovered from scarlet fever has been practiced since 1927 in the management of patients critically ill with the disease or its complications. During that time 13,003 patients with scarlet fever of all grades of severity have furnished opportunity for a thorough test.

Three factors theoretically contribute to the value of the method. One is the important nutritive effect to be derived from any transfusion through the transfer of physiologically active erythrocytes. The benefit to the secondary anemia, which so commonly accompanies hemolytic streptococcus infections, is not to be discounted. The method has a second advantage in that resistance is increased by the transfer of large numbers of leukocytes which in the presence of immune serum possess an enhanced phagocytic activity against the infectious agent. Finally, humoral immunity is passively conferred by the specific antibodies of the serum in a manner comparable to convalescent serum therapy, the value of which has been repeatedly corroborated.<sup>4</sup> With immunotransfusion, however, the amount of protective substances is from five to ten times greater than is ordinarily accomplished by the injection of serum and, furthermore, is introduced into the blood stream directly rather than indirectly, as by the intramuscular route.

#### TECHNIC OF IMMUNOTRANSFUSION

The transfusion of whole unaltered blood can be accomplished either by multiple syringes or by a mechanical apparatus for transfusion. It is not uncommon practice to use a syringe, rinse it with sterile salt solution and again aspirate blood from the donor. Since many patients with septic scarlet fever have a bacteremia, adequate protection of the donor requires that no syringe should be used more than once. After blood has been drawn from the donor and delivered to the recipient the syringe should be discarded and a fresh one used to continue the transfusion.

The mechanical apparatus devised by Brines<sup>5</sup> has been used in most of the transfusions of this series. The operation is accomplished more rapidly than with syringes, the method is equally efficient in protecting the donor and has the added advantage of requiring only one physician without technical aid.

Transfusion without delay is often desirable and many times necessary because patients are frequently in a critical condition when first seen. In some ten instances the ultimate outcome has apparently been determined by the immediate availability of a donor. In hospital practice all adult patients are tested for their blood group and examined for evidences of syphilis and tuberculosis when first admitted to the wards. Preparation for immunotransfusion then requires only the determination of the blood group of the patient and the selection of a proper donor from those currently available. Transfusion has been completed within forty minutes after a patient has reached the hospital.

Persons convalescent from scarlet fever have not been used as donors of blood earlier than the fifteenth day of their illness. Convalescence has preferably not

exceeded three or four months, although the original illness has been as far removed as a year. Donors are listed according to their blood group, with the date of scarlet fever, age, weight, address and telephone number. Periodic revisions keep the list current. Donors are paid a fee, and no difficulty has been encountered in providing adequate numbers.

Immunotransfusion is by no means limited to hospital practice, although it is most conveniently performed under operating room conditions. An appreciable number of the patients in this series were treated at home.

No small part of the benefit from immunotransfusion is thought to be derived from the red and white cells of the transfused blood. Consequently unaltered blood has been transferred directly from vein to vein in an attempt to avoid as far as possible osmotic or other changes in the physiologic status of erythrocytes and leukocytes. Sodium citrate or any other anticoagulant has not been used. If a simple serum effect were desired, this consideration would not be important.

One transfusion has usually produced the desired effect when the clinical indication is sepsis associated with early scarlet fever. Less commonly transfusion has been repeated two or even three times. Five patients received four transfusions, another, five

TABLE 1—The Number of Immunotransfusions for Individual Patients

Number of Transfusions	Early Septic Scarlet Fever		Late Septic Scarlet Fever	
	Cases	Deaths	Cases	Deaths
One	95	1	95	17
Two	10	2	17	5
Three	5	1	13	6
Four	4	0	1	0
Five	0	0	1	0
Six	2	1	1	0
Seven	0	0	2	0
Total	110	10	140	28

Three patients had six transfusions and two others with prolonged septicemia had seven. The number of patients treated by this method was 246, the number of transfusions, 355.

Relatively large amounts of blood have been transfused for infants and small children usually from 100 to 150 cc. for older children about 300 cc., and for adults 500 cc. Deleterious effects on cardiac action have not been noted. An occasional reaction after transfusion has led to increased fever and respiratory effort. The death of one patient was presumably due to transfusion of incompatible blood as determined by subsequent retest. Donors were at that time selected from members of the same blood group as the recipient or were universal donors (group IV, Moss). Compatibility has since been determined both by blood grouping and by direct matching of samples.

The better clinical effect from the blood of an immune donor, compared with that from a supposedly normal individual, has been demonstrated many times. Because of financial inability to provide an immune donor a parent of a child has occasionally acted in that capacity. Failing of the desired result a second transfusion with immune blood has produced a sharply defined result. The advantage of immunotransfusion should not discount the use of blood from a normal person particularly if the Dick test is negative in the event that a recently convalescent donor cannot be obtained. It is worth trial.

<sup>4</sup> Wever, C. H. *J. Infect. Dis.* 22: 211 (March) 1918.  
<sup>5</sup> Brines, O. A. *The Transfusing of Unmodified Blood*. Arch. Surg. 10: 10 (May) 1918.

## INDICATIONS FOR IMMUNOTRANSFUSION

The number of available donors, even in a large medical service, of itself limits the method to those critically ill in whom other therapeutic measures have failed or offer little. The indications include severe early septic scarlet fever, the late septic complications of the ear, throat or paranasal sinuses, a bacteriologically demonstrated or clinically definite septicemia or septicopyemia, and less frequently postscarlatinal bacterial endocarditis.

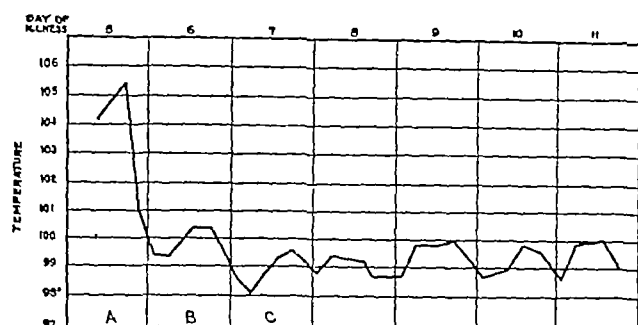


Fig. 1 (case 1)—Early septic scarlet fever, termination by crisis. A, pansinusitis, otitis media, septic sore throat, meningismus; immunotransfusion (300 cc). B, restless, improved. C, no meningeal irritation.

This is not the place for the discussion of general therapeutic measures in early scarlet fever. Two principles are, however, pertinent to the problem, particularly to immunotransfusion and its indications.

The simple clinical diagnosis of scarlet fever is not sufficiently informative for unreserved choice of suitable therapeutic measures. It is equally essential to determine the clinical form of the disease. Patients of this series were divided into five groups, of which two were large and represented the moderate and moderately severe infections, and two were smaller and included patients with the septic and toxic forms of scarlet fever. Patients with surgical scarlet fever constituted the fifth group.

No single specific or symptomatic method of management is applicable to all patients or to all kinds of scarlet fever. Those with moderate or mild infections respond satisfactorily to symptomatic management. For a smaller number, perhaps one fourth of all patients, some form of specific therapy is well advised, either

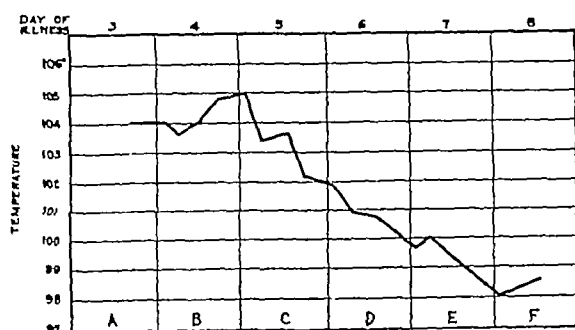


Fig. 2 (case 2)—Early septic scarlet fever, termination by lysis. A, extensive exudate tonsils and pharynx, edema of fauces, cervical lymphadenitis and periadenitis, eruption prominent. B, immunotransfusion (450 cc). C, general condition markedly improved, throat clearing. D, no exudate in throat, ulcer of palate healing, rash fading. E, ulcer practically healed. F, uneventful convalescence.

scarlet fever streptococcus antitoxin, human convalescent serum or immunotransfusion. Each has its indications and, within limitations, its contraindications.

Scarlet fever streptococcus antitoxin injected intramuscularly is advocated for patients with moderately severe scarlet fever and an absence of hypersensitivity to horse serum. With demonstrated hypersensitivity, human convalescent serum may be substituted to advantage.

Relatively few instances of truly malignant toxic scarlet fever are encountered in present-day practice, as only 84 cases among the 13,003 of this series were of that type. An effect may be expected from the usual intramuscular administration of antitoxin. Immunotransfusion has been distinctly disappointing in this form of scarlet fever, since each of three patients died. Striking results may usually be obtained by the intravenous injection of scarlet fever streptococcus antitoxin, a method not ordinarily advocated.

In this experience scarlet fever streptococcus antitoxin has been somewhat disappointing in septic scarlet fever, and yet this is perhaps the one scarlatinal infection in which it is used most commonly, irrespective of opinion as to its general advisability. Septic scarlet fever is responsible for more deaths than any other clinical form. Immunotransfusion in this experience has given results not obtained by other methods.

## EARLY SEPTIC SCARLET FEVER

Acute septic scarlet fever is not common but is an important factor in determining the gross fatality rate from the disease. During the years 1927-1931, 10,666 patients with scarlet fever were admitted to the wards of the Herman Kiefer Hospital. The fatality for the

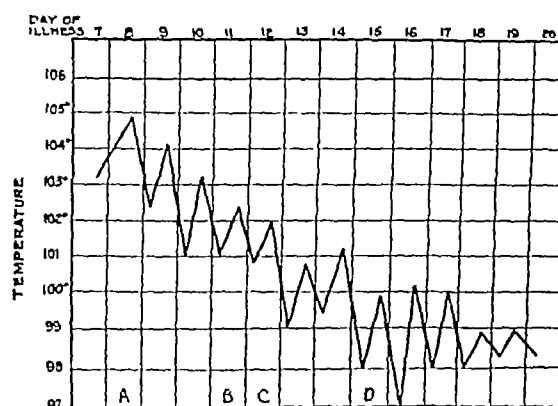


Fig. 3 (case 3)—Late scarlet fever. A, immunotransfusion (250 cc). B, rhinitis and sinusitis improved. C, eyes readily open. D, incision of abscess of lacrimal sac.

328 septic cases was 16.2 per cent, for all others 0.6 per cent. Only 43 per cent of the deaths were from complications in the course of moderate, moderately severe and surgical forms of the disease, which included 96 per cent of all patients.

The clinical features of septic scarlet fever are familiar to all who have had contact with this disease. Inflammation of the pharynx is frequently so extensive as to give rise to exudate and even pseudomembrane. Actual ulceration of the mucosa is not uncommon. The swollen dry tongue, the abundance of pus escaping from the nasal passages, the swelling of the tissues of the neck, the marked enlargement of the cervical lymph nodes and the tenderness over the paranasal sinuses are clinical features rarely equaled in other septic processes of the throat. The ethmoid cells are often so involved as to broaden the root of the nose and cause edema of the eyelids of such extent that the eyes are completely closed. The patient scarcely escapes involvement of the middle ears. Especially marked is the appearance of profound prostration from general sepsis, which many times can be demonstrated by bacteriologic examination of the blood.

When scarlet fever streptococcus antitoxin was first available, it was hoped that its greatest effect would be in the management of these conditions. Accumulated experience has been disappointing. The serum is pre-

marily antitoxic and lacks potency in antibacterial immune bodies. Septic scarlet fever is primarily due to an invasion of the tissues by hemolytic streptococci rather than from absorption of their toxins. From theoretical considerations, immunotransfusion should be admirably suited to its management.

Only the exaggerated instances of early septic scarlet fever have been treated by this method. Nineteen deaths occurred among 116 cases. Patients with milder septic infections received convalescent serum intravenously, sometimes in combination with streptococcus antitoxin injected intramuscularly.

As with all specific measures, the earlier in the course the treatment is instituted, the more favorable is the outcome. Immunotransfusion within the first four or five days of illness often produces a striking clinical result with the fever terminated by crisis and the subsequent course as uneventful as that of any mild scarlet fever (case 1, chart 1). Termination by crisis is the more common result, but occasionally it drops by lysis (case 2, chart 2). Results have been satisfactory when patients were first seen as late as the sixth or seventh day of the disease, although improvement was less rapid than with earlier transfusion (case 3, chart 3).

The method may still be of value even very late in septic scarlet fever. A patient with extreme sepsis was admitted in a moribund condition on the tenth day of

its lack of effect. In replacement of the inadequate and all too frequent hopelessness of expectant and symptomatic treatment, immunotransfusion has contributed materially.

**Late Sepsis of Middle Ear Disease**—Septicemia in scarlet fever frequently originates from suppurative otitis media which has extended to produce mastoiditis and, in some instances, thrombophlebitis of the lateral sinus. In this series septicemia was determined sixty-

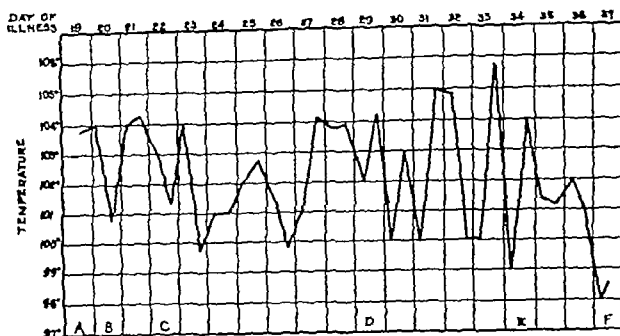


Fig 5 (case 5)—Lateral sinus thrombosis and septicemia of late scarlet fever. A condition on entering suppurative otitis media bilateral acute mastoiditis, lateral sinus thrombosis septicemia marked cervical lymphadenitis. B mastoidectomy, left ligation of external jugular vein. C, mastoidectomy, right. D, blood culture, hemolytic streptococcus. E immunotransfusion (300 cc). F discharged.

nine times and was responsible for seventeen deaths. In forty-five instances, septicemia followed mastoiditis without intracranial extension, and the number of deaths was five. Case 4 (chart 4) is a typical illustration.

Sixteen patients with middle ear infection had lateral sinus thrombosis, five being admitted to the hospital with that condition. The association of middle ear disease, mastoiditis and lateral sinus thrombosis has a grave prognosis, and yet ten of the sixteen patients recovered. The clinical condition of two patients was apparently hopeless, transfusion being performed on one at a time when the fever was 107.2 F. All represented far advanced infection, of which case 5 (chart 5) is typical.

**Late Sepsis After Purulent Infection of the Nose and Throat, Septicemia**—Except for early septic

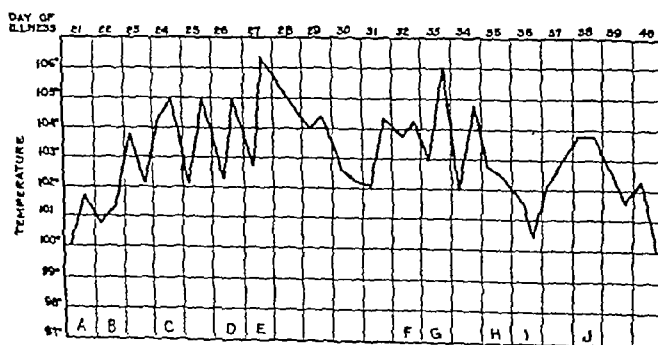


Fig 6 (case 6)—Septicemia in late scarlet fever. A abscess of axillary lymph node after moderately severe but uneventful early scarlet fever. B blood culture hemolytic streptococcus. C immunotransfusion (200 cc). D toxic ileus. E immunotransfusion (240 cc.) suppurative arthritis of elbow. F abscess of leg. G immunotransfusion (200 cc.). H three additional abscesses of extremities. I suppurative arthritis of hip. J immunotransfusion (90 cc.).

scarlet fever, this condition furnished the most frequent indication for immunotransfusion. Secondary involvement of the nose and throat after acute scarlet fever is common. Postscarlatinal angina is often limited to a simple tonsillitis but may attain exaggerated proportions. One patient of this group is of more than usual interest and was the first of this series (chart 6).

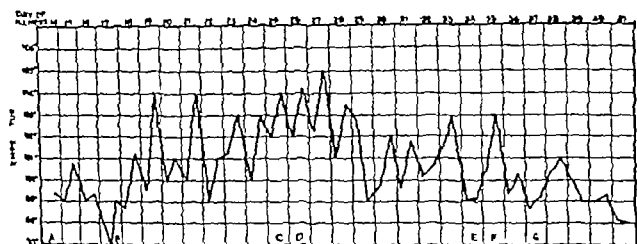


Fig 4 (case 4)—Septicemia after mastoiditis, late complicated scarlet fever. A otitis media mastoiditis hemorrhagic nephritis. B mastoidectomy. C exploration of mastoidectomy wound. D no lateral sinus thrombosis. E blood culture hemolytic streptococcus. F listless continually drowsy marked anemia. G immunotransfusion (400 cc). H sitting up playful color brighter improved.

illness. She was perhaps as critically ill as any patient in this experience. The resident physician voiced the opinion at the time of admission that she could scarcely be expected to survive the hour. She was irrational and comatose, and the pulse rapid and weak. The evidences of general sepsis were extreme. Following immunotransfusion the temperature gradually fell, to reach normal limits on the twenty-seventh day of illness, seventeen days after admission to the hospital. Following a protracted convalescence recovery was complete.

#### LATE SEPTIC COMPLICATIONS OF SCARLET FEVER

Authorities are in agreement that no known method of specific management produces appreciable effect on the late septic complications of which those related to the ear and the paranasal sinuses are most common. The complications are essentially the result of invasion of tissue by streptococci. Scarlet fever differs from most communicable diseases in that its complications are due to the infectious agent associated with the acute stage of the disease. Streptococcus antitoxin as would be anticipated has been demonstrated repeatedly to be without value in the management of complications. The experience parallels the lack of result with diphtheria antitoxin in such complications of diphtheria as peripheral paralysis or myocardial failure. Thorough and extensive test of convalescent serum has demonstrated

## RESULTS

In the course of five and one-half years 13 003 cases of scarlet fever have been under observation. Immunotransfusion has been used in 246. The two common indications for its use have been early septic scarlet fever and the septicemia associated with late complications, of which three groups have been distinguished.

TABLE 2—*Immunotransfusion in Early and Late Sepsis of Scarlet Fever Cases and Deaths*

Clinical Condition	Number of Cases	Number of Deaths	Deaths per 100 Cases
Septic scarlet fever, early	116	19	16.4
Late sepsis after purulent disorder of nose and throat, septicemia	60	17	28.6
Late sepsis associated with mastoiditis	47	5	11.1
Late sepsis associated with mastoiditis, sinus thrombosis and septicemia	16	6	37.5
Total	246	47	19.1

The extent to which immunotransfusion was limited to patients manifestly ill is shown by a summary (table 3) which presents the degree of fever at the time of transfusion. Only thirty-two patients had fever less than 102 F, of whom none were in the early stages of septic scarlet fever, the indication for transfusion being prolonged sepsis with low grade septicemia. In 60 per cent of cases the fever was greater than 104 F, while fifty-five patients had fever within the range of from 105 to 106 F. A not inconsiderable number (twenty-two) had fever in excess of 106 F. Five patients were given transfusions of blood with little hope of effect, at a time when the fever was between 107 and 108 F and two recovered. These data indicate that the selection of patients for treatment by this method was on the basis of a probable adverse outcome and, in not a few instances, apparent hopelessness. More than one fourth (25.5 per cent) of the patients died within thirty-six hours of the time they came to the hospital. In general, patients of this group represented the difficult problems in scarlet fever.

The kinds of associated conditions likewise illustrate the clinical seriousness of the scarlatinal infections treated by this method. Acute mastoiditis was represented eighty-six times, suppurative ethmoiditis

TABLE 3—*Temperature of Patients at the Time of Transfusion*

Degrees Fahrenheit	Number of Cases	Number of Deaths	Deaths per 100 Cases
Under 102	32	3	9.4
102 to 103	21	4	17.4
103 to 104	45	9	20.0
104 to 105	60	11	18.3
105 to 106	55	11	20.0
106 to 107	17	6	35.3
107 to 108	5	3	60.0
Total	246	47	19.1

forty-one ulcerative pharyngitis with severe angina, twenty-five empyema thoracis, ten acute endocarditis, nine. Thirty-one of the patients had pneumonia. Complications having an unusually serious prognosis include sixteen instances of lateral sinus thrombosis, one of cavernous sinus thrombosis, five with streptococcus meningitis, seven instances of encephalitis, five patients with multiple abscesses of the lung and four with abscess of the brain.

The diagnosis of septicemia was made in eighty-four cases, either by clinical criteria or by culture of the blood or by both. There were if anything more than stated because the criteria for clinical determination of

septicemia were carefully considered and perhaps unusually conservative. This is illustrated by a fatality rate of 27.1 per cent for forty-eight patients with streptococci in cultures of the blood, and a rate of 41.7 per cent for thirty-six without bacteriologic confirmation. The most common local source of septicemia was middle ear disease. Pansinusitis in one instance eventuating in cavernous sinus thrombosis, was next most common. A few instances of septicemia were dependent on a focus of infection in the mitral leaflets. Others originated from infection of the throat, and for a few the source was indeterminate.

The greatest fatality from scarlet fever is among young children, a circumstance true for most of the acute infectious diseases. Four patients aged less than 1 year, received immunotransfusion and one recovered. It is remarkable that only four deaths occurred among nineteen patients aged from 1 to 2 years. Thirty-three cases in the 2 year age group resulted unusually well. The fatality for cases in which transfusion was performed is arranged by age groups in table 4.

## CONCLUSIONS

Successful management of early scarlet fever depends on accurate determination of the clinical form of the disease. Proper judgment of the relative seriousness

TABLE 4—*Case Fatality by Age Groups*

Age, Years	Number of Cases	Number of Deaths	Deaths per 100 Cases	36 Hour Deaths	Per Cent of All Deaths in 36 Hours
Under 1	4	3	75.0	2	66.7
1	19	4	21.1	2	50.0
2	33	5	15.2	2	40.0
3	31	7	22.6	1	14.3
4	21	8	38.1	2	25.0
5 to 9	96	16	16.7	3	18.8
10 to 14	12	0	0.0	0	—
15 to 19	7	2	28.6	0	0.0
20 to 29	8	2	25.0	0	0.0
30 to 39	4	0	0.0	0	—
Total	246	47	19.1	12	25.5

of the infection is a second requisite. Convalescent serum, scarlet fever streptococcus antitoxin and symptomatic measures each have their indications.

Immunotransfusion is superior to other methods in the treatment of acute septic scarlet fever, the so-called scarlatina anginosa or scarlatina necroticans. The results in malignant toxic scarlet fever are less favorable than with scarlet fever streptococcus antitoxin.

Known specific measures have been uniformly disappointing in the management of late septic complications. Immunotransfusion has perhaps its most important indication in secondary sepsis, general septicemia, septicopyemia and acute bacterial endocarditis of late scarlet fever. It is not alone a hospital procedure but has been successfully used in private practice under home conditions. It has been applied in the management of other infectious diseases, including erysipelas, poliomyelitis, measles and meningococcus meningitis.

The results in scarlet fever are of themselves difficult to evaluate because the patients were a group largely selected on the basis of a grave prognosis. The clinical severity of infection is inadequately expressed by mere description. The best index is probably the general fatality rate among large numbers of patients with scarlet fever, to the more serious cases among whom this method was applied. Since the use of immunotransfusion the fatality rate for 13,003 patients with scarlet fever has been less than half that for the previous 5,000 cases. For 2,167 cases during 1931, the last year of this experience, the rate was 0.6 per cent.

## REPORT OF CASES

CASE 1—A boy, aged 23 months, was admitted to the hospital on the fifth day of illness with severe septic scarlet fever. The fatality at this age is particularly great. Physical examination revealed every evidence of septic scarlet fever, with suppurative ethmoiditis of such a degree that both eyes were closed. There was an abscess of an axillary lymph node, and the child had meningismus of sufficient degree to suggest leptomenigitis. Lumbar puncture revealed a clear cerebrospinal fluid containing 20 cells per cubic millimeter of fluid and a trace of globulin. The fever was 105.4 F. Transfusion was performed shortly after admission. By the following morning the fever had dropped to 99.4 F and attained a maximum of only 100.4 F that afternoon. The course thereafter was uneventful and associated with normal temperature.

CASE 2—A girl, aged 15 years, with unusually severe septic scarlet fever, was seen on the third day of illness. An extensive exudate covered both tonsils, the pharynx and the uvula and suggested diphtheria. A perforating ulcer had completely eroded the left soft palate. Swelling of the faucial tissues, of the regional lymph nodes and of the subcutaneous tissues of the neck was intense. Transfusion was done early the next morning at a time when the fever was 104.8 F. The temperature progressively and consistently dropped each day thereafter, to reach normal on the eighth day of illness, four days after transfusion. The day following transfusion the general clinical condition of the patient was markedly improved. By the third day the rash had faded, the ulcer of the palate gave evidence of healing, and the throat was essentially free from exudate.

CASE 3—An infant, aged 17 months, was brought to the hospital on the eighth day of illness with malignant septic scarlet fever. Both middle ears were discharging, and the nose and throat presented the usual signs of intense suppuration. Suppurative ethmoiditis caused both eyes to be completely closed. Meningismus was present, and the prolonged general sepsis had led to extreme emaciation. Blood from a patient convalescent from scarlet fever (250 cc) was transfused at a time when the fever was 105 F. Progress was subsequently slow but continuous. The fever declined essentially one degree each day. Four days later both eyes could be opened readily, and ethmoiditis had largely subsided. Fever was absent by the eighteenth day of illness, the tenth day in the hospital. Convalescence was thereafter uneventful.

CASE 4—A girl, aged 7 years, was admitted to the hospital on the fourteenth day of scarlet fever because of acute mastoiditis. Both middle ears had been discharging since the eighth day. The fever was 101 F. Within the next two days an increasing tenderness over the mastoid process and definite postauricular swelling indicated the need for mastoidectomy. Although the fever was only 99 F. Extensive necrosis of bone was demonstrated at operation. Instead of subsiding, the fever progressively increased and manifested daily septic variations. The lateral sinus was thought to be thrombosed. An exploratory operation showed a localized deposit of fibrin on the wall of the vessel but no occlusion. On the twenty-fifth day of illness, hemolytic streptococci were found in cultures of the blood. The fever at this time was 105 F. Improvement occurred during the next several days, but subsequently the fever returned to 104 F and was accompanied by a marked constitutional reaction. The patient was listless and slept most of the time and the pallor of profound secondary anemia developed. Following immunotransfusion on the twenty-fifth day the fever receded to normal limits within three days. Clinical improvement was striking. The patient sat up and was playful; the color was brighter and improvement continuous.

CASE 5—In a boy aged 4 years suppuration of both middle ears developed after scarlet fever. The condition eventually progressed to bilateral mastoiditis. He was admitted to the hospital on the nineteenth day of illness, the fever at that time being 104 F. Left mastoidectomy was performed shortly after admission. Destruction of the bone was so extensive as to have caused complete thrombosis of the lateral sinus. The external jugular vein was ligated and the sinus drained. The general clinical condition of the patient was so unfavorable that it was deemed unwise to proceed with operation of the evident but less severe infection of the mastoid of the opposite side. The second

operation was performed two days later. A continuous septic type of fever indicated generalized infection, and hemolytic streptococci were subsequently demonstrated in cultures of the blood. Immunotransfusion was performed at a time when the fever was 105.8 F. The temperature declined each day thereafter, to reach normal limits on the third day. Clinical improvement was even more marked than indicated by the fever curve. On the fourth day after transfusion the patient was removed to his home for further convalescence.

CASE 6—A girl, aged 26 months, admitted to the hospital on the fourth day of illness, had severe septic scarlet fever which included ulcerative changes of the pharyngeal mucosa and purulent infection of the nose and paranasal sinuses. After a somewhat prolonged febrile course the fever became normal and progress was uneventful until the twenty-first day of illness, when a severe secondary sore throat developed. An abscess of an axillary lymph node appeared and the following day the fever was 103.6 F. A culture of the blood revealed hemolytic streptococci. Immunotransfusion was performed four days after the appearance of secondary angina, at a time when the fever was 106.4 F. Within the next two days the temperature declined to 102 F, to be followed by a secondary rise to 106 F and the development of toxic ileus. Multiple abscesses of the soft parts appeared in rapid succession, in addition to osteomyelitis of the head of the femur. Two additional transfusions were performed during the next five days. The abscesses were eventually incised, and after the fortieth day the temperature was continuously normal.

Taylor and Hamilton Avenues

ACCIDENTAL INJURIES IN OFFICE  
PRACTICE

RICHARD KOVACS, M.D.

NEW YORK

"Primum non nocere"—first of all do not cause any harm—is the classic Latin pronouncement as to the duties of the physician toward his patient. Legal authorities tell us that the average physician when taking charge of a patient must have the reasonable degree of learning and skill that is ordinarily possessed by physicians and surgeons in the locality where he practices. On the other hand, "a physician who holds himself out as being specially versed in some phase of medicine is required to possess special knowledge and skill, not merely such knowledge and skill as the average physician has but such as is possessed by the average specialist."<sup>1</sup>

The modern development of medicine and surgery with the tendency to the extended use of apparatus for diagnostic and therapeutic purposes has made these demands much more complicated. The doctor is not only supposed to be a diagnostician and have a good knowledge of the action of drugs and of the principles of surgery, but is also expected to be a mechanic and somewhat of an electrotechnician. He must be able to supervise and direct his nurses and other technical personnel and is liable for improper treatment on their part, yet no matter how skilled the physician or his personnel accidents are unavoidable from time to time. My object in this paper is to analyze accidents due to the use of therapeutic apparatus in the practice of physical therapy exclusive of x-rays, and to present the principles the observance of which (1) will prove reasonable knowledge and skill on the part of both general practitioner and specialist and (2) will tend to keep accidental injuries at a minimum.

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1 Straker L. P. Courts and Doctors New York Macmillan Company 1932 p. 16



The causes that lead to the occurrence of accidental injuries can be classified in three broad groups (1) the equation of the operator—improper technic or inattention, (2) the equation of the patient—unusual sensitiveness (or idiosyncrasy, which is particularly true in regard to x-rays), lack of cooperation or contributory negligence, (3) the equation of apparatus and accessories—faulty construction or mechanical breakdown. Many injuries are attributable to an unfortunate combination of causes. Considering the widespread use of physical treatment measures, the number of injuries occurring is almost negligible, as long as the general rules of safe technic are followed, a single cause usually does not lead to any serious injury.

Accidental injuries in the course of office treatment by physical measures can be grouped as follows: 1. Electrical shock, due to the sudden powerful influence of an electric current on the entire body, this may be due to (a) accidental contact with a grounded object (water pipe, radiator, electrical socket) while receiving an electric current from an apparatus or while receiving a galvanic bath, (b) breakdown between the primary and secondary side of a high tension transformer and lack of sufficient safeguards (magnetic cutout) to prevent the jumping over of the dangerous high tension low frequency current to the patient. 2. Burns of varying kind, due either to excessive current density or to excessive heat or ultraviolet radiation over part of the body. Inflammation of the eyes has occurred through neglect of protecting the eyes against ultraviolet rays. 3. Mechanical injuries, tearing of the skin or rupture of internal organs, due to a blow from an improperly supported piece of apparatus or to excessive action of the apparatus itself, as has happened with some mechanical exercisers.

#### EQUATION OF THE OPERATOR

The operator of any piece of apparatus used for diagnosis and treatment must have a fair conception of its working mechanism and have full knowledge of the proper technic of its application. As a rule such knowledge must be acquired on the basis of clinical instruction and experience but not from the salesman of apparatus. The operator of any apparatus should be able to visualize what is going on inside the apparatus when it is started, how the energy output of that apparatus is controlled, and how it will affect the parts of the body subject to its influence. He must know how to apply and hold the electrodes in good position and must know how to proceed with any electrical treatment without discomfort to the patient, to the degree of maximum efficiency. He must be familiar with the danger signals of chemical or heat burns. He must take nothing for granted so far as the patient is concerned, and use all reasonable precautions to avoid accidents, save for wilful acts or neglect of the patient in disregarding properly understood warnings. No complaint of a patient during examination or treatment, no matter how trivial, should ever be lightly brushed aside. I had occasion to render expert testimony in a suit which was very damaging to the defendant physician when the plaintiff testified that, when she cried out with pain during a diathermy treatment, the doctor said, 'Don't be a baby,' and afterward a good sized burn was found where the pain had been complained of. Part of the proper technic is to see that the patient is made comfortable and remains so during the entire treatment, with the part under treatment well supported and relaxed, also, in a busy office, that a time clock or other

controlling device be used to cut off the current automatically at the expiration of the treatment period.

It is an important part of the routine of any office that the parts receiving treatment be carefully inspected before and after each application, any changes being noted. One occasionally hears complaints made by patients that they noticed a blister on returning home after an electric treatment. If thorough routine inspection of the parts after any treatment is consistently carried out and no changes are found in the office, one can safely assert that the lesion complained of did not originate from the treatment there, for any damage to the skin from a galvanic, diathermic or other electric current would produce enough change in the tissues to be visible immediately and not hours afterward except in the case of x-ray reactions which may not manifest themselves for weeks or months after the last treatment. An interesting illustration of this statement is the case of a patient in one of my clinics who had been given one diathermy treatment for a pain of the shoulder following a minor exertion. Three weeks later we heard from his company doctor that he presented himself with a deep ulcer in the shoulder and claimed that it originated from the treatment. We verified the fact that he had received a routine inspection after treatment and no change found. He came back to our clinic and the alleged burn was proved to be a broken-down gumma with a four-plus Wassermann reaction of the blood. His pain after exertion was the first sign of the development of the gumma.

Burns due to heat treatment by lamps as a rule also show up immediately, but occasionally a blister may develop over night, following a long heat exposure. Such lesions are due to the raising of the superficial epithelium by an exudation of lymph but being quite superficial they dry up in a day or two and never can give rise to a serious complaint. Burns after ultraviolet exposure take twenty-four to seventy-two hours to develop fully while x-ray burns are well known to take weeks to develop. The chief protection of the operator in such a case is an indisputable record as to a generally correct technic and a machine properly calibrated by a physicist in case of roentgen therapy.

A final point of safe technic is never to leave a patient alone during a treatment in which the slipping of a conducting cord or a fastening clip or of any of the electrodes could give rise to an immediate burn. Either the physician or his trained office assistants must be ready at all times to decrease the current strength or to shut it off altogether if the patient complains or there is any possible sign of danger. There are timing devices available which, connected to the apparatus, enable the patient to shut off the current by simply pulling a cord, simultaneously a gong summons the operator. This is a perfectly safe arrangement, provided the patient is told how to use it.

#### EQUATION OF THE PATIENT

The physical and mental equation of the patient is of paramount importance in administering treatments. A safe technic in many instances depends on the patient's cooperation in reporting at once an unpleasant sensation or a feeling of excessive heat, or in keeping still in a certain position, patients sometimes fail to comprehend these instructions for one reason or another.

As is well known, in diathermy and galvanic treatments the theoretical amount of current intensity is estimated according to the size of the active electrode—provided the electrodes are equidistant and on opposite

surfaces of the body. The meter reading on the apparatus, however, mainly serves as a safeguard as to the maximum amount that may be administered. The patient's comfortable toleration is always the principal guide. Yet this may mean two wholly different meter readings in a case of a husky laborer and that of a neurotic woman, and it will be different also in a person with skin anesthesia following a peripheral nerve injury or in a skin with extensive recent scar tissue. I remember a clinic case of a laborer, some years ago, to whom diathermy had been given through the palm of the hand and the patient told to report any sensation of burning. Reliance was placed on the apparent comfort of the patient, and current in excess of the estimated maximum reading was turned on. At the end of the application, during which no complaint had been heard from the patient, there was a deep burn that took six weeks to heal. Uneven contact with slight sparking over an insensitive area may likewise bring on unheralded burns but, as a rule, all diathermy burns are accompanied by a marked sensation of pain. Galvanic burns are apt to occur with less painful sensation.

In certain kinds of technic a feeling of tension, instead of burning or pain, serves as a subjective warning sign, usually in treating the wrist or ankle by the cuff and plate (longitudinal) method. I had occasion to testify in a case in which a person was treated in a hospital by a physician, the demonstrator for a manufacturer, who was anxious to show the favorable effects of diathermy on arteriosclerotic gangrene of the foot. He applied a plate under the sole of the foot, and a cuff round the middle of the calf. The patient complained repeatedly during treatment of tightness about the ankle, yet the operator, evidently relying on the comparatively low meter reading, paid no heed to this. The result was a sloughing off of part of the achilles tendon, a foot deformity, and a warm session in court.

The individual skin sensitiveness toward ultraviolet radiation in those of fair complexion, blondes and old persons is well known and must always receive consideration. Certain sensitizing substances, such as quinine or methylthionine chloride (methylene blue), also may render the individuals temporarily oversensitive to light treatments. The minimal dose within safe toleration of such patients can be determined only by preliminary testing over a small area of the skin. The local application of the following drugs should not be used before or immediately after roentgen treatment: iodine, iodoform, resorcinol, oil of cade, tar preparations, lotio alba, salicylic acid, betanaphthol, chrysarobin, gasoline, benzine, scarlet red, sulphur, benzoic acid, strong mercury preparations and balsam of peru. According to Remer,<sup>2</sup> these tend to increase the skin effects of x-rays.

#### EQUATION OF THE APPARATUS

Apparatus must be in good working order as an essential for the safe application of any kind of treatment. At the same time any apparatus used day by day is apt to get out of order through continued friction or wear such as slow disintegration of insulation due to heat or through defective construction. When a patient is treated by an apparatus with an undetected defect, a minor mishap or a real tragedy may occur. Kowarschik<sup>3</sup> recently reported two such happenings. In one case

galvanic treatment for facial paralysis was administered from a new type vacuum tube galvanic generator, which changes the alternating street current into a direct or galvanic current. One electrode in the form of a half mask was placed over the face, the other over the forearm. A small, cheap circular wire rheostat, similar to the control on radio boards, was used to regulate the strength of the current. At the end of the treatment the assistant slowly turned this control back to zero and just at that moment the patient cried aloud and fell unconscious to the floor as if struck by an electric bolt. The cause for the profound electrical shock was found in the poor construction of the rheostat, the lever of which swung over from the zero position to 360 degrees—that of full strength—without an intervening catch. The patient thus suddenly received the full strength of the current through the head.

The other, more tragic, case was that of an Italian physician who demonstrated to a group of friends the mild heat effects of a high frequency current by making each hold two cylindric metal electrodes and turning on the current. When the turn of a girl, aged 19 years, came, and the current was put on in the same manner, she fell dead. It was found that a broken wire in the transformer caused the dangerous high voltage low frequency current to jump over into the high frequency circuit, there being, contrary to the safe rule, direct (galvanic) coupling between the two sides instead of the safe inductive or magnetic coupling. In the use of x-ray apparatus there have been several fatal accidents to patients, physicians or nurses, or to a person holding a child in position on an x-ray table. A form of public liability insurance should be carried by physicians to cover such accidents.

The danger of recommending unsafe apparatus for home use is illustrated by a fatal accident in England, in which a young man was killed by shock as he touched an ultraviolet lamp which he lighted while sitting in a bathtub. It was found that the particular make of lamp was electrically short-circuited in a number of ways, and the return ground current did its deadly work, spreading over the large wet surface of his body.

Such extreme cases are, fortunately, rare in this country but should serve as a warning to buy only apparatus of standard make and from a responsible manufacturer. Cheap appliances of flimsy make may readily give rise to similar accidents. Apparatus must be kept in good working order by regular frequent inspection and by immediately correcting any trouble, no matter how trivial. It is bad psychology ever to discuss any trouble with apparatus before a patient. When receiving electrical treatment for the first time, patients are usually apprehensive and any doubts expressed about the smooth working of the apparatus do not sound cheerful to them, may cause them to jump throw off electrodes at the slightest provocation, and thereby cause a real burn.

#### SUMMARY

Only the principal factors in causing accidental injuries have been outlined, and no effort has been made to describe these injuries or their treatment in detail. It is evident that any form of office treatment by apparatus that is powerful enough to do good is capable of causing various degrees of injury through improper technic, contributory negligence of the patient, or mechanical faults in the apparatus or accessories. General practitioner and specialist alike must be

<sup>2</sup> Remer, John and Whetterlee W. D. *X-Ray Dosage in Treatment and Prognosis*. New York: Macmillan Company, 1923.  
<sup>3</sup> Kowarschik, Josef. *Die Gefahren elektromedizinischer Apparate*. Ztschr. f. d. ges. Ther. 12: 52-59, 1922.

acceptably trained and be ever watchful to administer treatments within a large margin of safety so that, whatever accident may occur from time to time, it will belong among the really unavoidable ones

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## IODISM

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Iodism is now rarely seen, since iodides have been replaced by other remedies. At present iodine intoxication is limited mainly to attempts at suicide or to accidentally swallowing the tincture of iodine.

The introduction of solutions and compounds containing large percentages of iodine are used extensively in therapeutics or as opaque substances for radiography of cerebral and spinal spaces, genito-urinary organs, uterus and tubes, sinuses and bronchi. Such preparations are potential sources of iodism. Idiosyncrasy to iodine and inevitable errors and accidents of technic may lead to an increasing frequency of these conditions unless the dangers are realized and measures for prevention and treatment are instituted.

The following account of my own case may be of interest.

April 29, 1932, at 10 30 a m, 30 cc of chloriodized peanut oil, as a therapeutic measure for chronic bronchitis and diagnostic aid for suggestive early bronchiectasis, was administered to me by Dr Hugo Deuss by the passive introduction method proposed by Alton Ochsner.<sup>1</sup> This method, in brief, is as follows. The pharynx and hypopharynx are anesthetized with 10 per cent cocaine solution by an applicator to prevent the swallowing reflex. Following this, from 3 to 5 cc of a 3 per cent solution of procaine hydrochloride is poured on the tongue and runs down into the bronchi and controls the cough reflex. From 15 to 30 cc of the iodized oil is poured on the tongue, which is pulled out and the iodized oil goes into the trachea and bronchi. Except for one interruption caused by coughing, with expectoration of 5 cc (estimated), the introduction was completed. Films proved negative for bronchiectasis and some of the oil was shown to be in the stomach. By 4 p m, nausea, weakness and conjunctivitis were marked. At 6 o'clock, lacrimation and salivation were very marked and slight difficulty in respiration was noticed. An aqueous ephedrine spray was administered to the nose and throat several times and gave relief by midnight. At this time a very painful parotitis had developed. The next morning, both eyes were swollen from edema and there was severe conjunctivitis with lacrimation, parotitis was severe with marked salivation and a very severe frontal headache had developed. I was constrained to remain in bed for twenty-four hours. A slight papular rash appeared on the forehead but did not appear elsewhere and did not cause any symptoms and gradually cleared. A saline cathartic was taken about 1 30 p m of the 29th and fluids were pushed by mouth. The ephedrine spray was used in the nose and throat and in one week I was free from symptoms.

Severe skin eruptions with varying degrees of catarrhal involvement, mostly in the respiratory tract, or severe gastro-intestinal disturbances or both seem to be the most commonly reported symptoms of iodism. Neither of these was severe in my case. The striking features were conjunctivitis with edema of the eyelids and lacrimation, severe parotitis with salivation, severe frontal headache, and a slight edema of the larynx.

Chloriodized peanut oil contains about 27.5 per cent of iodine and 7.5 per cent of chlorine, making a total of 35 per cent halogens, in peanut oil. It has a high iodine value, a low specific gravity, a low content of

free fatty acids, a low linolic acid, which is highly responsible for irritating action of iodized oils and no free iodides. It is sufficiently heat stable to be sterilized by pasteurization.

It is only as the iodide that iodine is absorbed and causes iodism. Experimental and clinical evidence has shown that absorption from the bronchial mucous membrane is negligible. Thus the absorption must have been from the gastro-intestinal tract, excluding the possibility of idiosyncrasy. Frequent surface applications of tincture of iodine have been used without the slightest evidence of hypersensitiveness or idiosyncrasy. No iodides have been taken to my knowledge. The chloriodized peanut oil evidently entered the stomach by swallowing during the one spell of coughing during the introduction, because none was knowingly swallowed.

The following precautions are suggested. The patient should be instructed that none of the sputum should be swallowed during the procedure, nor afterward as long as the taste or smell of the oil is recognized. Films should be developed at once and if there is any considerable quantity of the iodized oil in the stomach it should be removed immediately by gastric lavage or induced vomiting and followed by a saline cathartic, and fluids by mouth should be pushed. In my own case a saline cathartic three hours afterward was not sufficiently antidotal.

This method of procedure should avoid this unpleasant experience in most cases.

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## STUDIES ON COMMERCIAL BACTERIOPHAGE PRODUCTS

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AND

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Bacteriophage therapy is now being widely used for many types of bacterial infection. In the United States at the present time there are three well known pharmaceutical companies manufacturing bacteriophage and offering it to the medical profession. The present impartial study was undertaken to test these preparations in vitro to ascertain whether they contained genuine potent bacteriophages. It may serve as a guide to physicians who use such preparations and aid them in interpreting clinical results. Should a commercial product prove to contain a bacteriophage only feebly potent or one not capable of producing any lytic action, failure in therapy need not reflect on or injure the reputation of genuine bacteriophage.

The first company<sup>1</sup> markets a jelly described in the labels on tube and carton as an antigen containing

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Graduate Medical School and Hospital, Columbia University.

<sup>1</sup> The five following products were prepared by Eli Lilly & Co., designated above as the first company or as company 1. They were submitted to us Oct 30 1931, and tested by us in January 1932.

Streptococcus indifferent	Lysed bacterial protein	Lot 37502
Streptococcus hemolyticus	Lysed bacterial protein	Lot 37485B
Streptococcus viridans	Lysed bacterial protein	Lot 36962B
B. coli	Lysed bacterial protein	Lot 37228B

Staphylo jel. Expiration date on carton was May 15, 1932.  
E. R. Squibb & Sons, designated the second company or as company 2, sent us one vial of polyvalent staphylococcus bacteriophage, Lot 46529, in October, 1931. It was tested in January 1932. We purchased a second vial of the same product Jan 14 1932, and tested it in March, 1932.

From Swan Myers division of Abbott Laboratories designated the third company or as company 3, we purchased Bacteriophage Staph. Serial No. A187121 marked on carton. Good until April 14 1933. It was tested in January 1932.

The Swan Myers Bacteriophage Staph. coli. Serial No. A2350, marked on carton 'Good until Feb 8, '32,' was tested Jan 5, 1932.

From the Research and Educational Hospital and the Department of Pharmacology, University of Illinois College of Medicine.  
<sup>1</sup> Ochsner, Alton. Wisconsin M. J. 25:544 (Nov.) 1926.

lysed proteins of staphylococcus. In the accompanying literature, however, appears the definite statement that bacteriophage is present. There are also two more recent jel products of the same company, one for the streptococcus, the other for the colon bacillus. In addition, there is available for clinical trial, but not for sale, fluid filtrates for colon bacillus and for three types of streptococcus.

The second company produces a fluid filtrate of staphylococcus bacteriophage.

The third company makes two preparations, both liquid filtrates, one for the staphylococcus and one for the staphylococcus and the colon bacillus combined.

#### METHOD

Plain nutrient broth of  $p_H$  7.6 was used throughout. To sterile tubes of this broth was added 0.5 cc. of the filtrate to be tested and 0.1 cc. of a broth bacterial suspension from twenty-four hour growth on agar slants. Suitable controls without bacteriophage were included. Incubation was at 32°C. with readings taken at intervals recorded in the tables. Filtrations were made at four hours for the staphylococcus and the colon bacillus, and at six hours for the streptococcus.

#### RESULTS

The first company's staphylococcus bacteriophage was tested for its action against a stock laboratory strain of bacteriophage-susceptible staphylococcus designated as staphylococcus C, and of susceptible colon bacillus, coli C, as well as against *Streptococcus viridans* A, never heretofore lysed by bacteriophage. Successive filtrations were made after four hours incubation with staphylococcus C.

From table 1, it will be seen that this product as it is marketed can inhibit the growth of staphylococcus C, colon bacillus C, and *Streptococcus viridans* A. However, through successive filtrations, it loses its power to act against anything but staphylococcus. It is evidently a weak antistaphylococcus bacteriophage which

TABLE 1—Growth in Tubes, After Four Hours' and After Twenty-Four Hours' Incubation at 32°C., Inoculated with Company 1 Staphylococcus Bacteriophage

	First Generation		Second Generation		Third Generation		Fourth Generation	
	4 Hrs	24 Hrs	4 Hrs	24 Hrs	4 Hrs	24 Hrs	4 Hrs	24 Hrs
Staphylococcus C								
With bacteriophage	0	0	3+	1+	4+	0	0	0
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
B. coli C								
With bacteriophage	2+	4+	4+	4+	4+	4+	4+	4+
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
Streptococcus viridans A								
With bacteriophage	0	0	4+	4+	4+	4+		
Without bacteriophage	4+	4+	4+	4+	4+	4+		

is amenable to being enhanced through successive contacts with a susceptible staphylococcus. The results suggested the presence of an antiseptic in the preparation. Through correspondence with company 1 it was found that an organomercury compound in 1:5,000 dilution was used as a preservative but that their tests showed that it caused 'no deleterious action on the phage. If this is so the product contains an extremely weak bacteriophage from the beginning, one not sufficiently potent to give the same clinical results as might be expected from a potent bacteriophage.

The preparation for the colon bacillus also showed the presence of an antiseptic. A colon bacteriophage was not recovered through five successive filtrations, but there was evidence of a weak staphylococcus bacteriophage.

The preparation for the streptococcus contained a high concentration of antiseptic. No streptococcus bacteriophage was detected in six successive filtrations.

TABLE 2—Growth in Tubes, After Six Hours' and Twenty-Four Hours' Incubation at 32°C., Inoculated with Company 1 Streptococcus Viridans Filtrate

	First Generation		Second Generation		Third Generation		Fourth Generation	
	6 Hrs	24 Hrs	6 Hrs	24 Hrs	6 Hrs	24 Hrs	6 Hrs	24 Hrs
Streptococcus hemolyticus S								
With bacteriophage	0	0	0	0	0	0	2+	4+
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
Streptococcus viridans G								
With bacteriophage	0	0	0	0	0	0	4+	4+
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
Streptococcus viridans C								
With bacteriophage	0	0	0	0	0	0	4+	4+
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
Streptococcus viridans M								
With bacteriophage	0	0	0	0	0	0	4+	4+
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
Staphylococcus C								
With bacteriophage	0	0	0	0	0	0	4+*	4+*
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
B. coli C								
With bacteriophage	0	0	0	0	0	0	4+	4+
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+

\* These tubes with bacteriophage grew more heavily than the controls.

The three fluid filtrates for *Streptococcus hemolyticus*, *Streptococcus viridans*, and indifferent streptococcus offered for clinical trial by company 1, were tested against a stock hemolytic streptococcus, which we shall designate as strain S, susceptible to lysis only by a specific bacteriophage, a *Streptococcus viridans*, strain G, recently isolated from a subacute bacterial endocarditis, and two other strains of *Streptococcus viridans*, designated as C and M, also isolated from cases of endocarditis. For comparison, *Staphylococcus C* and colon bacillus C, previously described, were used. Table 2 illustrates the results.

With the use of identical strains and under like conditions, the filtrates of *Streptococcus hemolyticus* and indifferent streptococcus were tested. The results were so nearly comparable with those of the *Streptococcus viridans* filtrate that table 2 will serve to illustrate the results for all three. We found that the filtrates seemed completely to lyse all the described organisms in six hours, surprisingly enough, since none of these streptococcus strains had ever been lysed before by any bacteriophage. Complete inhibition of growth was still noted at the end of seventy-two hours. Bearing in mind that a genuine bacteriophage is indefinitely transmissible in series, we tested a second generation. The same result was found, complete clearing in all tubes, including the staphylococcus and the colon bacillus. The controls, without filtrates, grew abundantly in each case. Since lysis of the staphylococcus and the colon bacillus by the streptococcus filtrates seemed inconsistent with the idea that the effect could be due to a specific streptococcus bacteriophage, the cause of such clearing required further investigation. Successive generations were made with each filtrate against each strain. The

results of the second and third generations were comparable to those of the first—complete clearing of all tubes. The fourth generation however, was disappointing, since no clearing of any of the tubes was recognizable. Each tube gave a growth as heavy as its control which contained no filtrate. A fifth generation confirmed the results of the preceding one—all tubes again remaining cloudy. Such a result would lead to the conclusion that the inhibition of growth was due to some factor other than the lytic principle. These results could be explained only by the presence of an antiseptic in the original material.

Frisbee and MacNeal<sup>2</sup> have shown that the presence of antiseptics such as formaldehyde and acriflavine are distinctly unfavorable to the action of bacteriophage. D'Herelle<sup>3</sup> pointed out that antiseptics such as sodium fluoride in a bouillon medium modify the state of bacteria and thus interfere with the operation of the bacteriophage. Wolff and Janzen<sup>4</sup> have shown that no bacteriophage action is possible in the presence of quinine derivatives, even if these substances are added in quantities so small that bacteria are killed only after an appreciable interval. Although lysis is lacking, bacteriophage is not destroyed but remains inert. It is

evidence of lysis for this organism. It is therefore not a question merely of a difference in potency between these two batches of bacteriophage but probably the substitution of a different race of bacteriophage. It is the standard varies so much from time to time, how is the physician to know whether he is using a powerful preparation or merely a tube of broth?

The fluid staphylococcus bacteriophage of the third company revealed a genuine and potent bacteriophage which lysed only the staphylococcus. This preparation contained no preservative. Its titer was 10<sup>-2</sup> in four hours and 10<sup>-7</sup> in twenty-four and forty-eight hours, as compared with 10<sup>-4</sup> in four hours and 10<sup>-9</sup> in twenty-four and forty-eight hours for our stock staphylococcus bacteriophage. Although the titer of company 3 bacteriophage is lower than ours it is still a very good bacteriophage. Our experiments, of course, do not reveal either the degree of polyvalence or the therapeutic efficacy of this preparation.

Surprisingly enough the staphylococcus-colon bacteriophage marketed by this company revealed nothing more than a poor colon bacteriophage. None of the potent staphylococcus bacteriophage previously described was recovered from this mixture, although successive filtrations were made. The weak colon bacteriophage was transmissible in series and could be enhanced slightly in four successive filtrations. It never was able to clear completely for twenty-four hours the very susceptible colon strain C, for which we have thirty separate colon bacteriophages all of which clear it twenty-four hours or longer.

The use of an antiseptic as a preservative for bacteriophage is improper, in our opinion. It must be borne in mind that bacteriophage closely resembles a living thing and may be destroyed by an agent powerful enough to kill bacteria. If an antiseptic is diluted to the point at which it no longer destroys but still inhibits bacterial growth, it may also inhibit the action of bacteriophage. Further, a bacteriophage exposed to the action of such an antiseptic may tend to lose its potency. Company 1, in a booklet for January and February, 1932, states that a preservative is present in its bacteriophage preparations but illogically warns that no antiseptic should be used during treatment with phage.

Jameson and Powell<sup>5</sup> have reported tests running for a year which proved that bacteriophage was not markedly affected by a 1:5,000 dilution of merthiolate. Tests performed in our laboratory showed that in this concentration of this antiseptic neither staphylococcus C nor colon bacillus C could grow, so that any possible effect on the corresponding bacteriophages was not disclosed. Even when only a single drop of 1:5,000 dilution of this drug was added to a tube of broth, the fluid medium was rendered unfit for the multiplication of these bacteria, no visible clouding taking place. That the bacteriophage is considerably affected by one drop of 1:5,000 dilution of the antiseptic is shown on agar plates streaked with one loopful from each tube in a series after the tubes had been incubated for two and one-half, five and twenty-four hours. The results are evident in table 4. A comparison of the readings with and without antiseptic will reveal how great an inhibition of bacteriophage it causes. Further work with the antiseptic is being carried out. In the meantime we can only point to the facts which show that by the methods employed by company 1 it was not possible to produce potent bacteriophage.

TABLE 3—Growth in Tubes, After Four Hours' and After Twenty-Four Hours' Incubation at 32 C., Inoculated with Company 2 Staphylococcus Phage

	First Generation		Second Generation		Third Generation		Fourth Generation	
	4 Hrs	24 Hrs	4 Hrs	24 Hrs	4 Hrs	24 Hrs	4 Hrs	24 Hrs
Staphylococcus C								
With bacteriophage	4+	2+	4+	3+	0	4+	0	1+
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
B. coll. C								
With bacteriophage	4+	4+	4+	4+	0	3+	1+	2+
Without bacteriophage	4+	4+	4+	4+	4+	4+	4+	4+
Streptococcus viridans A								
With bacteriophage	4+	4+	4+	4+	4+	4+		
Without bacteriophage	4+	4+	4+	4+	4+	4+		

because of these results that we feel that antiseptics are deleterious to the action of bacteriophage.

In the same manner, fluid staphylococcus bacteriophage of the second company was tested with the identical strains employed in the experiments already described with the staphylococcus bacteriophage of the first company. The results are indicated in table 3. From these tabulated results it is evident that the product as offered for sale is a weak staphylococcus bacteriophage containing no antiseptic. It attacks neither the colon bacillus nor the streptococcus. After several successive filtrations, the potency of the bacteriophage is increased. When this occurs, the bacteriophage is then active also against the colon bacillus. This is a characteristic of our stock staphylococcus bacteriophage which was sent on request to company 2 during the summer of 1931.

A second bottle of company 2 staphylococcus bacteriophage was purchased several months later for retest. It gave an entirely different picture. This bottle contained a potent staphylococcus bacteriophage of titer 10<sup>-7</sup> to 10<sup>-8</sup>. Furthermore, even after three successive contacts with colon bacillus C, there was no

<sup>2</sup> Frisbee, F. C., and MacNeal, W. J. J. Infect. Dis. 46: 405 (May) 1930.  
<sup>3</sup> d'Herelle, Felix. The Bacteriophage and Its Behavior. Baltimore, Williams and Wilkins Company, 1926, p. 72.  
<sup>4</sup> Wolff, L. K., and Janzen, I. W. Compt. rend. Soc. de biol. 87: 1087 (May) 1922.

<sup>5</sup> Jameson, W. A., and Powell, H. M. Am. J. Hyg. 14: 218 (July) 1931.



Our clinical experience leads us to believe that little or no benefit is to be expected from bacteriophage therapy when the bacteriophage used is not potent or does not lyse the strains causing the infection. Furthermore, the use of stock bacteriophages is limited. With infections due to the staphylococcus it is possible to use a stock preparation because there is a staphylococcus bacteriophage which attacks the great majority of staphylococci. There are exceptions, however, and in such cases it is necessary to prepare a specific bacteriophage. As no bacteriophages exist which are sufficiently polyvalent for most members of the colon bacillus and streptococcus species, specific bacteriophages must usually be made for the particular infecting strain of the individual patient.

For bacteriophage therapy to be intelligently applied, close cooperation between the clinic and the laboratory is essential. Cultures of specimens from patients must be taken to determine the causative bacteria. The organism must then be tested for its susceptibility to bacteriophage, and often a specific bacteriophage has to be prepared. Haphazard application of stock preparations to any infection whatever cannot be expected to yield anything but haphazard results.

Cooperation with the laboratory is also necessary if any progress is to be made in the study of the action

TABLE 4—Growth on Plate Cultures of *Staphylococcus C* Made from Broth Cultures After Two and One-Half Hours, Five Hours and Twenty-Four Hours Incubation of the Tubes at 32 C

	2½ Hours	5 Hours	24 Hours
From tubes to which one drop of 1:5000 Methylolite had been added			
With bacteriophage	++	++	0
Without bacteriophage	++	++	+
From tubes to which no antiseptic was added			
With bacteriophage	±	0	0
Without bacteriophage	++	+++	+++

of bacteriophage in the body. The duties of the laboratory do not cease with the preparation of bacteriophage. In a measure, they may be said to begin here. A careful follow up of specimens before, during and after treatment with bacteriophage should be made. Variations in susceptibility of the organism to bacteriophage often take place during the course of a disease, and a new specific bacteriophage may be required. Only through such studies can one hope to come to correct conclusions as to the value of bacteriophage therapy and to learn the most effective methods for the therapeutic use of the agents in this category.

#### CONCLUSIONS

One commercial company markets a bacteriophage preparation containing a preservative, which does not belong in a bacteriophage. Its preparation for staphylococcus contained a weak bacteriophage. In the streptococcus filtrates for clinical trial as well as in the streptococcus and colon bacillus products offered for sale the presence of bacteriophage could not be detected by us.

The second company's staphylococcus bacteriophage contains no preservative. A first sample revealed a weak bacteriophage but a later batch contained a potent staphylococcus bacteriophage.

The third company's staphylococcus bacteriophage has no preservative and is potent but its staphylococcus mixture is only a poor colon bacteriophage.

151 East Twentieth Street

## Clinical Notes, Suggestions and New Instruments

### FRACTURE OF THE ANTERIOR SUPERIOR SPINE OF THE ILLIUM

FREDERICK CHRISTOPHER, M.D., EVANSTON, ILL.  
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Up to 1924, Carp<sup>1</sup> collected twenty-one cases (including his own) of fracture of the anterior superior spine of the ilium. Two other cases have been found, which were not referred to in Carp's article. In 1867, Bousseau<sup>2</sup> reported a case in which both the anterior superior and anterior inferior spines of the ilium were fractured at the age of 15 years. Since this injury was caused by the passage of a wagon, it is scarcely eligible to this series. In 1914, von Saar<sup>3</sup> reported a case in a person, aged 18 years, who was "hurt while skiing." Since the publication of Carp's paper, twenty-two additional cases have appeared in the literature.<sup>4</sup> My case, accordingly, makes the forty-fifth to be reported.

The etiology of muscular avulsion of the anterior superior spine is of interest. Carp found the average age of his patients to be 17½ years. In the epiphyseal stage the youngest patient was 15 and the oldest 23. Carp also had one patient, aged 70. The average age in ten of the twenty-three recent cases was 16 years. All but one of Carp's cases were in males, while at least three of the recent cases were in females. All of Carp's patients had pain, and a snap was felt in 45 per cent of them. The etiology as analyzed by Carp was "running vigorously, 50 per cent, 'take off,' 16 per cent, running over uneven ground, 9 per cent, sudden turn backward, 5 per cent, rising out of seat, 5 per cent, slipping, 5 per cent, wrestling on sloping ground, 5 per cent, kicking, 5 per cent." Among the more recent cases the following etiologies are mentioned: "kicking football, running 100 yard dash, running, running and jumping (two cases), skiing, sudden movement, sudden incoordinated movement combined with internal rotation, running race, muscular violence." Kleinschmidt<sup>4</sup> classes the cases into two groups according to etiology: first (nine cases of his series), those in which the fracture occurs as the result of a defense motion—the sudden backward tension of certain muscle groups; second (five cases of his series), those in which there is no sudden movement change but the regular machine-like movements of the short sprints.

According to Köhler,<sup>5</sup> the anterior superior spine unites at 22 years, according to Carp, at 25 years. Practically all the cases have occurred in persons in the epiphyseal stage. The muscles having attachment to the anterior superior spine of the ilium are the tensor fasciae latae and the sartorius. The action of the former muscle is "to tense the fascia lata and at the same time to flex the thigh and rotate it slightly inward." The action of the latter is "to flex the thigh and leg and to rotate the thigh outward, when the leg is flexed, the muscle will assist in rotating the thigh inward." Moreover, as pointed out by Kleinschmidt, Poupert's ligament is attached to the

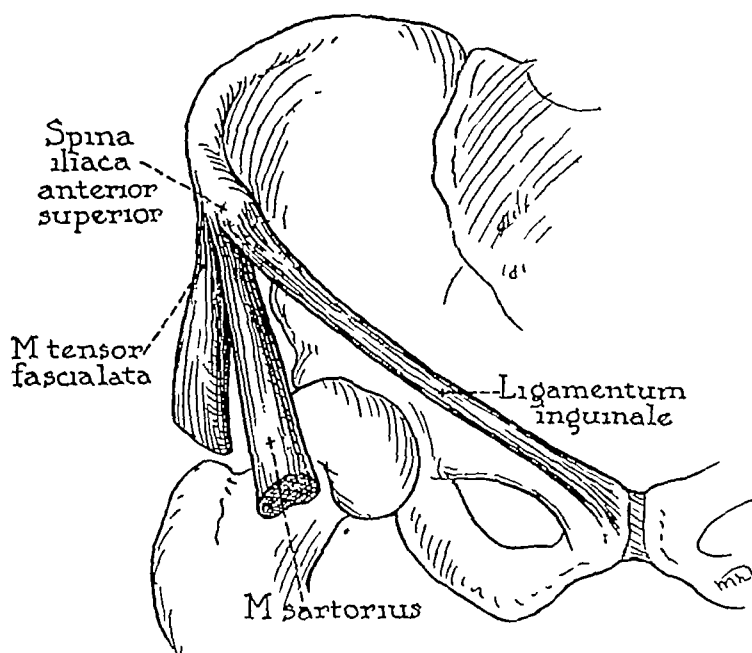
1. Carp, Louis. *Ann Surg* 79: 551 (April) 1924.
2. Bousseau quoted by Stimson. *Bull Soc anat*, 1867, p 283.
3. von Saar, G. *Neue deutsche Chir* 13, 1914.
4. These were reported by:  
Balensweig, J. *Am J Surg* 38: 256 (Oct.) 1924.  
Ord, A. G. *Lancet* 2: 1230 (Dec. 13) 1924.  
Heller, E. P. *Avulsion of the Anterior Superior Iliac Spine with Symptomatic Sacralization of the Fifth Lumbar Vertebra*. *J A M A* 84: 508 (Feb. 14) 1925.  
Nekula, R. *Časop lek. česk* 64: 1204 (Aug. 15) 1925.  
Kuhnast, W. *Arch f orthop u Unfall-Chir* 23: 460 1925.  
Roegholt, M. N. *Nederl Maandchr v geneesk* 13: 283 1925.  
Akin, O. F. and Carlson, C. E. *M Sentinel* 35: 431 (July) 1927.  
Karl, Georg. *Zentralbl f Chir* 57: 789 (March 29) 1930.  
Lohr, Deutsche med Wchnschr 56: 958 (June 6) 1930.  
Kahnt, E. *Zentralbl f Chir* 57: 2057 (Aug. 16) 1930.  
Pezcoller, A. *Osp maggiore* 19: 93 (Feb.) 1931. *Clin chir* 34: 249 (March) 1931.  
Turco, Adalgiso. *Polichinico (sez prat)* 38: 1308 (Sept. 7) 1931.  
Kleinschmidt, Hans. *Deutsche med. Wchnschr* 57: 1895 (Nov. 6) 1931.  
Losinger, L. I. *Ortop i travmatol* 5: 70 1931.  
Ebert, Karl. *München med. Wchnschr* 78: 27 (Jan. 2) 1931.  
Siebner, M. *Chirurg* 3: 59 (Jan. 15) 1931.  
Hänke, Hans. *Chirurg* 4: 23 (Jan. 1) 1932.  
5. Köhler, A. *Grenzen des Normalen und Anfänge des Pathologischen im Röntgenbilde* ed 3 1920 (quoted by Hänke).  
6. Pierol, G. A. *Human Anatomy*. Philadelphia: J. B. Lippincott Company, 1937.



anterior superior spine and to this ligament are attached the external oblique, the internal oblique and the transversalis muscles and the fascia lata. This author also believes that the gluteus medius and the iliacus muscles exert an influence on the anterior superior spine. Heller<sup>7</sup> believes that sacralization of the fifth lumbar vertebra has an important bearing on this fracture because it interferes with rotation of the fifth lumbar. In this connection it is of interest to note that cases have been reported of fractures by muscular violence of the anterior inferior spine.<sup>8</sup>

The diagnosis of fracture of the anterior superior iliac spine is based on the youth of the patient (from 14 to 25 years), the history of running a race or a sudden twist and localized tenderness over the affected anterior superior spine. A movable or fixed fragment often may be felt just below the anterior superior spine. Efforts to flex the thigh are painful. The diagnosis is confirmed by roentgen examination.

As Cotton<sup>8</sup> says, "The lesion seems not to be one of any gravity as to end-results." Böhler<sup>9</sup> says that in these fractures, in which there is considerable displacement, they "can be reduced by an open operation." Carp, however, found that the average duration of disability in nine cases in which operation was not performed was twenty days, whereas in the two cases in which operation was performed the disability was one



Attachment of the sartorius and the tensor fasciae latae to the anterior superior spine of the ilium. The abdominal muscles also have an influence on the spine because of their attachment to Poupart's ligament.

month. The end-result was excellent in all. The best treatment probably is rest in bed with the thigh in flexion for two or three weeks, with gradual slow resumption of activities.

#### REPORT OF CASE

The following is the report of a case of fracture of the right anterior superior spine of the ilium by muscular violence.

F U, a boy, aged 15 years, well developed and muscular, who was very proficient in competitive athletics, for some time (five weeks) previous to his accident noticed some pain and tenderness in the region of the anterior superior spines and crests of both iliac bones. May 7, 1932, the day of the accident, the boy had run in the 50 yard, the 100 yard and the 220 yard dashes and in the rest following these races he had become cooled off. Thereafter, he started the 120 yard low hurdle race without "warming up." His method of taking the hurdle involved sending the right leg over first and following with the left. After he had passed over the second hurdle and his right foot was on the ground and he was stepping forward with his left foot, he experienced a sudden severe pain and snap in the anterior superior spine of the right ilium and

collapsed on the track. At the time of the injury, the right thigh was apparently hyperextended. He was carried from the field in considerable pain. The patient was first seen at his home the following day. He was lying in bed in the position he had discovered to be most comfortable, namely with the thigh flexed on a pillow. There was marked tenderness in the region of the right anterior superior spine and immediately below it. There was considerable swelling. The patient was unable to flex the thigh because of extreme pain in the region of the right anterior superior spine. There was also some tenderness and pain in the region of the left anterior superior spine. The treatment consisted merely of bed rest for fourteen days, with the thigh in the semiflexed position. The patient was permitted to walk to the bathroom with the thigh flexed. May 21, two weeks after the accident, the patient walked into the office greatly improved. He was able to flex the thigh without pain. The displaced anterior superior spine of the ilium was easily palpated about 1.5 to 2 cm below its customary situation. The roentgen examination showed the detached fragment and what appeared to be callus between it and the ilium. When seen June 15, five and one-half weeks after the accident, there was no pain and the patient said he could "do anything." There was no pain on ascending stairs, running or swimming, and no limp. He had not been conscious of his trouble for the last two weeks. Examination disclosed a firm hard bony swelling below the anterior spine. This swelling was not tender. Movements of the thigh occasioned no pain. The roentgen examination showed considerable new bone formation. Although the patient was symptomatically cured, he was advised to refrain from the most violent activities for another month.

#### COMMENT

In this case it is not improbable that the muscles, which had not previously been "warmed up" by a little running, were less elastic and hence may have produced a more violent pull on the bony attachment. If this is a factor in this accident, it would seem wise for coaches to insist on preliminary "warming up" before permitting young athletes in the epiphyseal stage to engage in sprints or hurdle races.

723 Elm Street

#### BACILLUS WELCHII INFECTION

PRESTON NOWLIN, MD AND E. R. HIPP, MD  
CHARLOTTE, N. C.

Infection with *B. welchii* as the causative organism is of infrequent occurrence in civil practice. Such cases as are seen are generally those in which marked tissue damage has taken place and in which the wound has been grossly contaminated, as in street accidents and in gunshot wounds. The case reported here is of unusual interest because of the probable portal of entry of the infection and on account of the fact that it developed in apparently normal muscle tissue.

A J, a white man, aged 46, seen, April 30, 1932, complained chiefly of hemorrhoids. His family and past history presented nothing of importance except for the history of mild alcoholism during the past few weeks. The patient was well developed, rather obese, and somewhat under the influence of alcohol. Examination of the chest and abdomen presented no abnormalities. Rectal examination showed a large cluster of protruding externo-internal hemorrhoids with a mild associated proctitis.

May 4, after four days of rest in bed and palliative treatment, the patient was prepared for operation. The usual preoperative morphine was given and under a low spinal anesthesia the hemorrhoidal masses were resected and the wounds closed loosely with chromic catgut.

During the first twelve hours after operation morphine was used freely for pain and on one occasion morphine with 2 cc of 25 per cent magnesium sulphate was given. All these injections were given in the deltoid region of the right arm. Ten hours after operation, rather severe pain was noted in the right arm at the site of the hypodermic injections and the temperature rose to 102 F. On the morning of the first day after operation the pain had increased in severity, the temperature was 104 and the pulse rate was 140 and of good volume. There was tenderness and some induration in the arm, but no crepitation.

At 2 p. m. of the same day the patient showed evidence of severe shock, the pulse was extremely rapid and barely palpable,

<sup>7</sup> Whitelocke, quoted by Stimson and by Carp. *Lancet* Nov. 25, 1893.  
<sup>8</sup> Corlette, C. E. *M. J. Australia* 2: 682 (Nov. 12) 1927.  
<sup>9</sup> Cotton, F. J. *Dislocations and Joint Fractures*, ed. 2. Philadelphia, W. B. Saunders Company, 1924, p. 467.  
<sup>9</sup> Böhler, L. *Treatment of Fractures*. Vienna: William Maudrich, 1929, p. 63.

# CARDIORRHAPHY—SPIGEL

the temperature was 104.4, and the arm showed widespread crepitation extending from the scapular region of the right shoulder to below the elbow. Immediately the arm and shoulder were widely incised and there was an escape of foul smelling gas and a small amount of serosanguineous fluid. The muscles of the arm and shoulder were discolored and elevated from the underlying bone. Tubes were placed in the wound and 100 units of concentrated perfringens antitoxin was given intravenously. Smears and cultures showed the presence of *B. welchii* in large numbers.

Despite supportive treatment and further administration of antitoxin both intramuscularly and intravenously, the infection rapidly extended into the right pectoral and right infrascapular regions and the patient died on the evening of the second post-operative day, fifty-six hours after operation, death occurring from an overwhelming toxemia.

Nalle Clinic, 412 North Church Street.

## SUCCESSFUL CARDIORRHAPHY WALLACE SPIGEL, M.D. NORFOLK, VA

Of the numerous stab and gunshot wound cases admitted to the surgical clinic service at St Vincent's Hospital, relatively few involve the heart. The successful suture of a wound of the heart is not an uncommon surgical feat. To the individual surgeon, however, the experience of performing the operation is rare, and the subject receives but little consideration until the occasion presents itself.

The first attempted suture of a wound of the heart in a human being was by Cappelan of Christiania in 1895. Within ten years a statistical study revealed 38.75 per cent of recoveries in 160 cases. These figures have steadily improved. Tuffier, in 1920, compiled a total of 305 cases with 50.4 per cent of recoveries. Ballance, between 1912 and 1920, found 152 cases with 68.4 per cent of recoveries. Cutler in 1932, reported a survey of patients operated on between 1920 and 1926, a total of twenty-eight with 68.4 per cent of recoveries.

Before the time of Ambrose Pare (1509-1590) heart injuries were thought to be always fatal. He observed that this was not true and reported the case of a duelist who received a heart injury and pursued his opponent several yards. In 1868 Fischer collected all published reports of human heart injuries, 452, and showed that many of the patients lived several hours, some for days, and that 10 per cent recovered. John B. Roberts, in 1881 before the Anatomical and Surgical Society of Brooklyn suggested the advisability of suturing human heart wounds. In 1882, Bolck of Copenhagen demonstrated the feasibility of suturing cardiac wounds in animals. Farina, Cappelan and Rehn sutured wounds of human hearts. Rehn's patient recovered, Farina's patient lived six days and died of pneumonia. In 1901 Nietert reported the first two American cases. Vaughn reported another and collected reports of twenty-six cases from the literature.

A review of the literature shows that the best methods of exposure are first, removal of two or more ribs and costal cartilages subperiosteally; second, hinged flaps consisting of skin, muscles, ribs and possibly a portion of the sternum; third, median sternotomy; and fourth, intercostochondral thoracotomy, that is two three or four costal cartilages are divided near the sternum and the ribs retracted until sufficient exposure is obtained. The last two methods are the best. Median sternotomy has the advantage of exposing the heart without entering either pleural cavity, however, in most injuries the pleural cavity has already been penetrated. The value of the method of Beck, which places a stay suture through the apex of the heart is helpful in closing heart defects.

Death most frequently occurs promptly as the result of shock, hemorrhage and *herz tamponade* before any treatment can be instituted. The classic symptoms described many years ago include an anxious expression, restlessness, the patient may be unconscious, there is marked shock with pallor and cyanosis, the skin is covered with cold sweat, and there is tachypnea, the pulse being feeble and fast. The physical examination shows a wound over the precordium which frequently does not bleed extensively. There may be evidence of

pneumothorax or hemopneumothorax. The precordial area of dulness may or may not be increased in size. The apex impulse is altered. The heart sounds are usually distant. The diagnosis of cardiac injuries is not always easy, the diagnosis being made on symptoms that may be readily confused with and present a picture almost identical to that of pulmonary, pleural and pericardial injuries.

The surgical treatment should be prompt, even in the face of many usually definite contraindications to surgical intervention. It is felt that the gravity of heart injuries demands exploration, because, as may be seen by the figures that have been presented, prompt intervention has reduced the mortality of heart injuries from about 63 per cent, reported in the first series in 1909, to approximately 30 per cent at this time.

## REPORT OF CASE

J. C., a Negro, aged 25, was brought into the emergency room of St Vincent's Hospital, Sunday morning, Aug. 20, 1932. His clothes were drenched with blood, particularly his shirt, which was torn. He was sweating profusely. The pulse could not be felt in either the arms or the feet, the extremities were cold, the blood pressure could not be obtained, and, in general, he presented a typical picture of extreme shock. Respiration was slow and gasping, with an exaggerated apneic period. The heart sounds were not audible. However, by inserting the finger tip through the third intercostal space one could feel an irregular and weak beat, the rate being approximately thirty per minute. When the shirt was removed, a wound two inches long was apparent over the left side of the chest at about the level of the lower border of the second rib. The farther end of the wound was about 7 cm. from the midsternal line.

Under light ether anesthesia, the stab wound was enlarged transversely over the lower border of the second rib to the midclavicular line, and a perpendicular incision along the edge of the sternum down to the fifth rib was made. A portion of the third and fourth costal cartilages was removed. The pericardium was partially filled with blood and the left lung was entirely collapsed. With each feeble beat of the heart, blood welled up into the incision from under the sternum. Palpation under the sternum revealed a tear in the left auricle about an inch long. This was sutured with number 2 chromic catgut, a continuous suture and then a mattress suture being used. The instant the laceration was closed the heart beats became stronger, with a gradual rise in blood pressure. Within a minute the blood pressure was sufficient to cause hemorrhage of the arteries and veins in the incision. The wound was closed with one Penrose drain.

While the patient was on the operating table, 1,000 cc of saline solution was given intravenously. The pulse rate before the patient left the operating room was 100. About two hours after the operation, a blood transfusion of 500 cc was given. At 6 p. m., about six hours after the operation, 120/68, the pressure was 90 systolic, 60 diastolic, at midnight, 120/68, the second day, 124/64, the third day, 138/76, the fifth day, 128/68 at 110/70. No heart stimulants were given.

Daily examination of the chest revealed absence of breath sounds on the left side and dulness over the entire left chest. The respiratory rate varied from 38 to 60. Roentgen examination of the chest, August 29, revealed marked, diffuse increased density involving the entire left chest with obliteration of the diaphragm shadow, costophrenic angle and lung markings. The heart, trachea and mediastinum were displaced toward the right. The right lung showed considerable increase in lung markings, evidently caused by passive congestion. Radiographically, the observations were indicative of left pleural effusion.

August 30, following the roentgen examination, 32 ounces (945 cc) of bloody fluid was removed from the left chest. The respiratory rate was somewhat lessened. September 2, 8 ounces (235 cc) was removed, following which the respiratory rate became normal and breath sounds were audible in the left chest for the first time.

The postoperative course following the last thoracentesis was uneventful and the patient was discharged from the hospital at the end of the third week in excellent condition. On the twenty-third day the patient walked about a mile to the office without any signs of fatigue or circulatory distress.

Medical Arts Building

## Committee on Foods

### RULES AND REGULATIONS

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING  
AMENDMENT TO ITS RULES AND REGULATIONS

RAYMOND HERTWIG, Secretary

#### AMENDMENT OF RULES GOVERNING PACKAGE LABEL AND ADVERTISING

Rule one of the "Rules Governing Package Label and Advertising" (Rules and Regulations, September, 1932, page ten) has been amended by addition of the phrase "arranged in the order of their decreasing proportions by weight in the food and" The Rule now reads

A food may bear a distinctive, fanciful or brand name which is not misleading or deceptive by implication. The common name of the food or a descriptive statement of the identity of its ingredients arranged in the order of their decreasing proportions by weight in the food and in easily legible type must appear in proximity to the trade name on the label and in advertising if such be deemed in the interest or welfare of the public or physicians, or necessary to avoid improper or unethical merchandising practices. The description shall be such as to prevent deception or false implication by the color, flavor, structure, form appearance or other characteristic of the article and shall mention any unusual or unexpected ingredient

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION



RAYMOND HERTWIG, Secretary

#### QUAKER PEARL HOMINY

*Manufacturer*—The Quaker Oats Company, Chicago

*Description*—Coarse cracked and pearled white Indian corn grits containing practically no bran or germ

*Manufacture*—See this section for Quaker White Cornmeal (THE JOURNAL, Jan 7, 1933, p 43). The "flinty, coarse granular material" is "pearled," the finer portion is bolted out, and the larger grits are packed in cartons under the brand name "Quaker Pearl Hominy"

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	11.6
Ash	0.5
Fat (ether extraction method)	1.0
Protein (N $\times$ 6.25)	9.1
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	77.2

*Calories*—35 per gram, 99 per ounce

*Claims of Manufacturer*—A coarse cracked and pearled hominy for all table uses

#### CORINNIS WAUKESHA PURE SPRING WATER

*Distributor*—Hinckley and Schmitt, Chicago

*Description*—A bottled spring water of low mineral content practically free of micro-organisms

*Collection and Bottling*—Corinnis Water is obtained from the White Rock Mineral Springs at Waukesha, Wis. The property is kept in strictly sanitary condition. The several springs flow to the surface through limestone and underlying sandstone. In order to avoid contamination from any surface water the Corinnis Water is taken from the springs at a considerable depth and comes to the surface through a wrought iron pipe. It is thoroughly aerated and stored in a paraffin treated concrete reservoir, from which it is pumped through filters to remove any suspended material. The filtered water passes through an ultraviolet ray unit into clean tank cars through a specially devised cover.

The sanitation of the tank cars is very carefully supervised. The emptied car is sealed at Chicago, where the water is bottled, to prevent contamination during transit. At Waukesha the car is opened, scrubbed inside with a brush, rinsed out with water and treated with chlorine gas. The car is filled to overflowing with the spring water. A sample is taken for bacteriologic examination and the car is sealed and delivered to Chicago within twenty-four hours. The water is stored in glass lined tanks until bottled. The water passes from the tanks through an ultraviolet ray machine to the bottling machines. The bottles used are cleaned by washing with 5 per cent sulphuric acid solution, are immersed for eight minutes in 5 per cent sodium hydroxide solution (54 to 60 C) and then thoroughly rinsed eight times with water. The filled bottle is capped with a cellulose seal to eliminate possibility of contamination before being opened by the consumer.

*Analysis* (submitted by manufacturer)

Sanitary Analysis		
Appearance		Clear
Color		None
Sediment		None
		Parts per million
Nitrite nitrogen		0.002
Nitrate nitrogen		0.060
Ammonia nitrogen		0.060
Albuminoid nitrogen		0.014
Oxygen consumed		0.6
Chemical Analysis		
Total solids		340.0
Mineral matter		306.0
Organic and volatile matter		34.0
Hardness before boiling as CaCO <sub>3</sub>		220.0
Hardness after boiling as CaCO <sub>3</sub>		47.0
Sulphuric anhydride (SO <sub>3</sub> )		45.3
Silica (SiO <sub>2</sub> )		7.0
Chlorine in chlorides		8.0
Iron and aluminum oxides		2.4
Iron (Fe)		0.1
Calcium (Ca)		66.7
Magnesium (Mg)		23.8
Lithium		trace
Reaction after boiling		faintly alkaline

*Micro-Organisms*—(Average of fifty examinations of samples taken at the source)

Bacteria per cubic centimeter

At 37 C in 24 hours	0.1
At 20 C in 48 hours	0.6

B. coli test, fermentation in lactose broth for seventy-two hours—negative

(Average of one hundred examinations of samples taken from tank cars)

Bacteria per cubic centimeter

At 37 C in 24 hours	0.5
At 20 C in 48 hours	0.8

B. coli test, fermentation in lactose broth for seventy-two hours—negative

Official plate count, 4 bacteria per cubic centimeter

Tests showed no acid nor gas produced with lactose broth

*Claims of Manufacturer*—This bottled pure faintly alkaline low mineral content spring water is for all table and drinking uses

#### JELL-WELL PLAIN GELATINE

*Distributor*—Jell-well Dessert Company, Ltd, Los Angeles

*Description*—Plain granulated gelatin

*Manufacture*—An accepted gelatin prepared as outlined in THE JOURNAL, Feb 27, 1932, page 737, is automatically sealed in envelopes and packed in cartons

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	10.2
Ash	1.7
Sodium chloride	1.0
Fat (ether extract)	0.1
Protein (N $\times$ 5.55)	87.0
	parts per million
Lead (Pb)	0.0
Zinc (Zn)	less than 10
Copper (Cu)	less than 5
Sulphur dioxide	0.0
Arsenic (As <sub>2</sub> O <sub>3</sub> )	less than 0.3

*Calories*—35 per gram, 99 per ounce

*Micro-Organisms*—Average less than 1,000 per gram, contains no B. coli, gas forming bacteria, liquefiers or molds

*Claims of Manufacturer*—For all table uses of gelatin and for special diets

**BRER RABBIT PURE NEW ORLEANS  
MOLASSES (GOLD LABEL)**  
(Contains Sulphur Dioxide)*Manufacturer*—Penick and Ford, Ltd, New Orleans*Description*—Pasteurized New Orleans molasses taken from the first crystallization liquor in the preparation of cane sugar, treated with sulphur dioxide*Manufacture*—The cane syrup described for Brer Rabbit Pure Sugar Cane Syrup (THE JOURNAL, Jan 7, 1933, p 43) is concentrated by boiling. The cane sugar is partially crystallized out. The mass of crystals is removed by centrifugation. The liquid portion separated from the crystals, called "first A molasses," is heated to 80 C and automatically filled into tins, which are not cooled and therefore remain hot for a considerable time*Analysis* (submitted by manufacturer) —

	per cent
Moisture	22.2
Ash	3.6
Fat (ether extract)	0.0
Protein (N × 6.25)	0.5
Reducing sugars as invert	25.1
Reducing sugars after inversion (as invert)	70.4
Sucrose (copper reduction method)	43.1
Carbohydrates (by difference)	73.7
Iron (Fe)	0.005
Calcium (Ca)	0.15
Sulphur dioxide (mg per kilogram)	195

*Calories*—3.0 per gram 85 per ounce*Claims of Manufacturer*—The molasses is for all table, cooking and baking uses**PRUDENCE BEEF STEW***Manufacturer*—Boston Food Products Company, Boston*Description*—Canned beef stew containing cooked beef, potatoes, carrots, onions, salt and pepper*Manufacture*—United States Department of Agriculture inspected beef is trimmed of gristle, skin and sinews, placed in cold water and boiled until tender. It is taken from the kettle, again overhauled for skin, gristle or sinews, and then diced.

The vegetables used are pared by machine, washed, sliced, and in definite proportions admixed with the cooked beef. The mixture is filled into cans and processed.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	81.1
Total solids	18.9
Ash	1.6
Fat (ether extract)	1.2
Protein (N × 6.25)	8.9
Reducing sugars before inversion as dextrose	0.6
Sucrose (copper reduction method)	0.4
Crude fiber	0.3
Starch (acid hydrolysis method)	4.0
Carbohydrates other than crude fiber (by difference)	6.9

*Calories*—1.0 per gram 28 per ounce*Claims of Manufacturer*—This beef stew is for all table uses**ARBITRATOR PATENT FLOUR PHOSPHATE  
ADDED (BLEACHED)***Manufacturer*—Saxon Mills, St. Louis*Description*—Soft winter wheat patent flour with 0.5 per cent added monocalcium acid phosphate, bleached*Manufacture*—Selected soft winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL June 18, 1932 page 2210. Chosen flour streams are blended bleached with nitrogen trichloride (1½ ounce per 190 pounds of flour) and with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and finally mixed with 0.5 per cent monocalcium acid phosphate.*Analysis* (submitted by manufacturer) —

	per cent
Moisture	11.0-13.0
Ash	0.6-0.7
Fat (ether extraction method)	0.8-1.0
Protein (N × 6.25)	8.0-9.0
Crude fiber	0.2-0.5
Carbohydrates other than crude fiber (by difference)	79.2-85.8

*Calories*—1.0 per gram 102 per ounce*Claims of Manufacturer*—This flour is designed for general home baking especially biscuits and cakes**QUAKER YELLOW CORNMEAL***Manufacturer*—The Quaker Oats Company, Chicago*Description*—Fine granular yellow Indian corn cornmeal containing practically no bran or germ*Manufacture*—See this section for Quaker White Cornmeal (THE JOURNAL, Jan 7, 1933, p 43). Yellow instead of white Indian corn is used for the manufacture of this product. The fine material of desired granulation is packed in cartons under the trade name "Quaker Yellow Cornmeal"*Analysis* (submitted by manufacturer) —

	per cent
Moisture	11.8
Ash	0.4
Fat (ether extraction method)	0.7
Protein (N × 6.25)	8.8
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	77.5

*Calories*—3.5 per gram 99 per ounce.*Claims of Manufacturer*—A finely granular yellow cornmeal for all table uses**GLADIOLA PATENT FLOUR**

(Matured, Bleached)

**FANT'S FAIRY PATENT FLOUR**

(Matured, Bleached)

*Manufacturer*—Fant Milling Company, Sherman, Texas*Description*—Patent flour milled from a blend of soft wheat and hard wheat, bleached*Manufacture*—Selected wheat is cleaned, washed, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and with nitrogen trichloride (one-sixth ounce per 196 pounds)*Analysis* (submitted by manufacturer) —

	per cent
Moisture	13.0-14.0
Ash	0.36-0.39
Fat (ether extraction method)	0.8-1.2
Protein (N × 5.7)	9.0-11.0
Crude fiber	0.3-0.5
Carbohydrates other than crude fiber (by difference)	76.5-72.9

*Calories*—3.5 per gram 99 per ounce*Claims of Manufacturer*—An "all purpose" flour for home baking**UNION MADE BREAD LONG LOAF***Manufacturer*—Union Bakery Company, Sioux Falls, S. D.*Description*—A white bread made by the straight dough method (method described in THE JOURNAL, March 12, 1932, p 889) prepared from patent flour, water, sucrose, shortening, powdered skim milk, salt, yeast and malt syrup*Analysis* (submitted by manufacturer) —

	per cent
Moisture (entire loaf)	37.7
Ash	1.7
Sodium chloride (NaCl)	1.3
Fat	3.3
Protein (N × 6.25)	9.4
Reducing sugars as dextrose	2.7
Sucrose (copper reduction method)	2.5
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	47.7

*Calories*—2.6 per gram 74 per ounce.*Claims of Manufacturer*—Conforms to the United States Department of Agriculture definition and standard for white bread**SUPERB BRAND AMBER SYRUP**

(85 Per Cent Corn Syrup, 15 Per Cent Refiners' Syrup)

**GOLDEN RULE BRAND AMBER SYRUP**

(85 Per Cent Corn Syrup, 15 Per Cent Refiners' Syrup)

*Packer*—Penick and Ford Sales Company, Cedar Rapids, Iowa*Distributor*—Tolerton & Warfield Company, Sioux City, Iowa*Description*—Table syrup, corn syrup base (85 per cent) with refiners' syrup (15 per cent), the same as Penick Golden Syrup (Corn Syrup and Sugar Refiners Syrup) (THE JOURNAL, April 2, 1932 p 1159)

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 14, 1933

## 1933 DUES PAYABLE

Several weeks ago, the bills for 1933 dues were mailed to each Fellow and subscriber of THE JOURNAL. The readiness with which payments have been made is not only gratifying but significant. The number of remittances received actually exceeds those of last year at this time, a fact which indicates the esteem in which physicians hold Fellowship in the Association and the value they attach to THE JOURNAL. For the convenience of those who have not yet paid their 1933 dues, a colored slip is enclosed in this issue. It is a statement, cut in such a form and glued so that when folded a convenient "business reply" envelop is formed, requiring no addressing nor stamps. That THE JOURNAL will be as vitally necessary to the physician during the coming year as during the past is indicated by the fact that already more than a hundred articles of great importance are scheduled for publication. A listing of these articles will be found in the front advertising section, pages 16 and 17. It is earnestly suggested that every physician whose dues are not paid make prompt use of the colored slip and thereby assure uninterrupted delivery of THE JOURNAL to his address.

## EXERCISE AND GASTRIC DIGESTION

In Beaumont's classic "Experiments and Observations on the Gastric Juice and the Physiology of Digestion," published in 1833, he anticipated a question that is frequently being asked at the present time, namely, What is the effect of exercise on the gastric secretion of man? Is complete rest after meals desirable in the interest of food digestion? From his observations on Alexis St. Martin, the "man with the lid on his stomach," Beaumont drew the inference—one of the fifty-one inferences with which he concluded his essay—that "gentle exercise facilitates the digestion of food." Since that time the possible significance of another

physiologic factor—the emotional state of the person—has come into notice. Today it is realized that anxiety, anger, fear and sorrow may either stimulate or inhibit physiologic processes. The views on this subject in relation to the gastric functions have by no means been uniform. As early as 1846, Combe expressed the dual belief that "rest of body and tranquillity of mind for a short time, both before and after eating, are necessary and conducive to healthy digestion."

The possibility of direct experimentation on man awaited the introduction of the gastric tube, by which test samples of the stomach contents after meals could be removed for comparative analysis, for persons with a gastric fistula such as Beaumont's patient possessed are rarities. The latest investigators<sup>1</sup> in this field, working at the University of Wisconsin, recall that in 1928 Campbell, Mitchell and Powell<sup>2</sup> in England studied a series of normal young men who ate, before exercises, a test meal of bread, meat and potatoes, or a modification of the Boas meal of oatmeal gruel. The severity of the exercise to which these young men were subjected was roughly measured and consisted usually of running round the laboratory, the distance varying from one to four miles. They concluded that such exercise delayed digestion but that lighter exercise, walking, had no inhibitory influence on gastric secretion.

According to the observations of Hellebrandt and Miles,<sup>1</sup> gentle exercise before or after a test meal augments gastric acidity. Protracted exercise is not necessarily depressing, but exhaustive muscular exertion, whether it precedes or follows a test meal, is associated with a diminution of the acidity of the gastric secretion to a level below resting normal, and the decrease is greatest when the exercise is accompanied by emotional excitement. In explanation of some of these manifestations the Wisconsin investigators point out that during muscular exercise, especially when violent and carried on at high speed, lactic acid is rapidly produced, accumulates in the blood, lowers the bicarbonate content and accelerates the output of carbon dioxide. The lungs are unable to wash out the carbonic acid rapidly enough and the hydrogen ion concentration rises. In the light of these experimental observations, they add, the diminution in gastric acidity during violent exercise may be due to the concomitant fall in plasma bicarbonate. In accord with this hypothesis, hypoacidity was observed to appear only when the muscular exertion was associated with evidences of the incurrence of an oxygen debt, and the greatest diminution in gastric acidity occurred when the exercise was severe and exhausting. The physicochemical changes in the blood, they conclude, must therefore be taken into consideration in the determination of the cause of the exercise gastric hypo-acidity. Furthermore, as Hellebrandt

<sup>1</sup> Hellebrandt, Frances A., and Miles, Meryl M. The Effect of Muscular Work and Competition on Gastric Acidity, *Am J Physiol* 102: 258 (Oct.) 1932.  
<sup>2</sup> Campbell, J. M. H., Mitchell, G. O., and Powell, A. T. W. *Guy's Hosp Rep* 78: 279 (July) 1928.

and Miles point out, if the muscular exercise is severe and generalized, splanchnic vasoconstriction diverts blood away from the visceral area to the active skeletal muscles and skin, producing a relative diminution in the oxygen supply to the stomach. This may contribute to the production of the gastric hypo-acidity associated with exhaustive muscular exertion. It may well be, as Hellebrandt and Miles suspect, that moderate muscular exertion heightens the general metabolism, improves the circulation and has a stimulating effect on the organism as a whole, thus augmenting functional activity.

### HYPERINSULINISM WITH ADENOMA OF THE PANCREAS

The history of the development of our knowledge of the endocrine glands, though brief, is fascinating. Already their manifold activities have been investigated and measured and in some cases the active substances they secrete have been isolated chemically. Today the physician may supplement a deficient production of endocrine secretions by administration of the appropriate hormone, by surgery he may remove parts of glands that become hyperactive.

Perhaps the most spectacular achievement in this field was the isolation of insulin and its administration in the treatment of diabetes, a disease now frequently called hypo-insulinism. Perhaps just as spectacular is the recent discovery that a disease exists that is the opposite of diabetes. In some patients there is an overproduction of insulin, so that the blood sugar instead of being high as in diabetes is abnormally low, indeed, so low in amount that coma, convulsions and death occur when food is withheld. Moreover, unlike diabetes, in which the lesion is often difficult to demonstrate morphologically, the cases of hyperinsulinism are frequently associated with an adenoma composed of islet cells. In some cases the tumor has been removed with complete cure.

The possibility that a neoplasm of the islets of Langerhans could actually induce symptoms of hypoglycemia by producing an excess of insulin was first demonstrated in the well known case of carcinoma of the pancreatic islets reported in 1927 by Wilder, Allan Power and Robertson.<sup>1</sup> The characteristic symptoms of weakness, coma and convulsions accompanied by a low blood sugar and relieved by ingestion of carbohydrate were clearly demonstrated. Operation was not performed because the extensive nature of the tumor, composed of islet tissue as well as the presence of metastases, would have made surgical removal out of the question. Such a combination of symptoms had of course been known since 1922 as being due to the inadvertent giving of an overdose of insulin and was called insulin shock.

<sup>1</sup> Wilder R. M., Allan F. N., Power M. H. and Robertson H. E. Carcinoma of the Islets of the Pancreas. *J. A. M. A.* 89: 548 (July 10).

Discrete benign tumors of the pancreas composed of islet tissue have been observed by pathologists,<sup>2</sup> but their clinical significance was overlooked until recently. In a series of cases reported by Smith and Seibel<sup>3</sup> is the record of a patient who had had attacks of nervousness and coma, which had been diagnosed as syphilis of the central nervous system. At his final admission to the hospital a routine blood sugar determination was made shortly before death and reported as 58 mg per hundred cubic centimeters. At necropsy a definite adenoma of the pancreas containing islet cells was found. Recognition that this was an actual case of hyperinsulinism waited five years, when the occurrence of similar cases made the diagnosis clear.

Surgeons were not long in attempting the actual removal of these benign tumors. Howland, Campbell, Maltby and Robinson<sup>4</sup> seem to have reported the first successful cure, although another unreported case in Boston has been mentioned by Cushing.<sup>5</sup> Two additional cases were reported from Barnes Hospital, St. Louis, both operations being successful.<sup>6</sup> One of these patients had had a diagnosis of epilepsy and the other had been labeled a "brain tumor suspect" by competent clinicians. How many similar patients are at large harboring adenomas but removed from a hope of cure by a mistaken diagnosis? Since it is easy to detect these cases by the finding of a low blood sugar, many more will probably be recognized.

The surgical treatment depends on finding the tumor at operation. When the tumor is near the surface and in the body or tail of the pancreas, detection is easy, but the tumors are apt to be so small, as pointed out by Smith and Seibel, that they may be missed even at necropsy if they are embedded in the parenchyma, especially at the head of the gland. The small size of these tumors also raises the question as to how they are able to produce sufficient insulin to cause hypoglycemia when the functional cells in the remaining islet tissue in the rest of the gland far outnumber the cells of the small tumor. Possibly an abnormal secretion is produced in these adenomas. Indeed Dr. R. R. Bensley, who has "informally" studied nearly all the reported tumors, has shown morphologically that one is dealing with a tumor of abnormal beta cells. His discussion of the microscopic appearance of these tumors is included in the report of the case of Womack, Gnagi and Graham. Another possibility, of course, is that these tumors, though composed of relatively few cells, through their abundant nerve supply are functionally hyperactive and produce insulin in abnormally large

<sup>2</sup> Warren Shields. Adenomas of the Islands of Langerhans. *Am. J. Path.* 2: 335 (July) 1926.

<sup>3</sup> Smith Margaret G. and Seibel M. G. Tumors of the Islands of Langerhans and Hypoglycemia. *Am. J. Path.* 7: 723 (Nov.) 1931.

<sup>4</sup> Howland Goldwin, Campbell W. R., Maltby E. J., and Robinson W. J. Dysinsulinism. *J. A. M. A.* 93: 674 (Aug. 31) 1929.

<sup>5</sup> Cushing Harvey. Neurohypophyseal Mechanisms from a Clinical Standpoint. *Lancet* 2: 119 (July 19) 1930.

<sup>6</sup> Carr A. D., Parker Robert, Grove Edward, Fisher A. O. and Larimore J. W. Hyperinsulinism from B Cell Adenoma of the Pancreas. *J. A. M. A.* 96: 1363 (April 25) 1931. Womack N. A., Gnagi W. B. Jr. and Graham E. A. Adenoma of the Islands of Langerhans With Hypoglycemia. *J. A. M. A.* 97: 851 (Sept. 19) 1931.



amounts. While there are cases of hypoglycemia due to other causes, those due to the presence of a benign adenoma furnish a striking example of triumphant surgical therapy based on extensive fundamental physiologic research.

### METHEMOGLOBINEMIA

Diseases once regarded as clinical rarities have come into prominence as more commonly occurring disorders when attention has been explicitly directed to their nature and detection. Sometimes the unexpectedly large comparative prevalence owes its discovery to the introduction of new methods of examination. Heart blocks and arrhythmias are far more familiar to the physician of today than they were to his predecessors of a generation ago, because he has become accustomed to look for their symptoms. It is not long since hyperinsulinism was an unrecognized disease entity. This is true likewise of carotenemia, as distinguished from jaundice. The illustrations could readily be multiplied. Enough have been mentioned to explain the reference here to a rarely recorded type of chronic cyanosis properly designated as methemoglobinemia.

Methemoglobin is not entirely unfamiliar to the biochemist. He can form it in blood through treatment with a variety of chemical compounds: permanganates, chlorates, nitrites, nitrobenzene, acetanilid, and many others. It differs from the conventional oxyhemoglobin in that the oxygen is firmly united in methemoglobin. It also shows a characteristic spectrum that serves for purposes of identification. A prominent feature of methemoglobinemia is cyanosis and, if the condition is severe, dyspnea. The cyanosis is due to the dark brown color of methemoglobin and appears to be more intense than cyanosis produced by a similar concentration of reduced hemoglobin in the blood. The dyspnea is referable to the anoxemia caused by diminution in the oxygen-carrying capacity of the blood.

The term "enterogenous cyanosis" was introduced in 1902 by the Dutch physician Stokvis,<sup>1</sup> who described a case of chronic cyanosis without cardiac or pulmonary lesions or evidences of drug poisoning, which is known to give rise to transient methemoglobinemia.<sup>2</sup> A few additional cases have been recorded from other places. Careful study has revealed the possibility that in some of them the cyanosis may have been due to sulphhemoglobinemia, an analogous condition in which the blood pigment is altered by hydrogen sulphide. Only careful examination will permit a distinction between the two sorts of "enterogenous cyanosis." Excluding the doubtful diagnoses, Dieckmann<sup>3</sup> has collected the records of six authenticated cases of true methemoglobinemia, to which he has added a new one. The discovery of the methemoglobin was accidental, but the investigator

advises that the possibility of its occurrence in all cases of cyanosis be kept in mind. The diagnosis of methemoglobinemia was based on the following examination. The citrated blood was diluted with nine volumes of water and examined spectroscopically. A band centering at 638 millimicrons was found. Solutions of methemoglobin gave a similar absorption band. The band disappeared on the addition of sodium hydro-sulphite. This excludes the possibility that the pigment was sulphhemoglobin.

In Dieckmann's patient the cyanosis of unknown origin had been present for twenty-seven years. He believes that the accidental discovery of the methemoglobinemia in a routine examination warrants the statement that the condition would be detected more frequently if the blood of cyanotic patients were examined spectroscopically. More attention should be given to determination of the oxygen capacity of the blood than to the colorimetric determination of hemoglobin. In the normal person, Dieckmann adds, the results are identical, but in certain pathologic conditions the apparent hemoglobin may be within normal limits and yet the patient may be suffering from anemia because a portion of the hemoglobin cannot carry oxygen.

### Current Comment

#### CONJUGATION OF THE SALICYLATES

Conjugation in the body of drugs and poisons with metabolic products, such as glycine and glycuronic acid, may be regarded biologically as a protective mechanism. The classic example of such detoxication is the conjugation of benzoic acid with glycine, which results in the formation of hippuric acid, an excretory product. A similar detoxicating mechanism was originally postulated for the salicylates, but the evidence in support of this view was inconclusive. Later researches brought forward much evidence of a negative character. Except for an occasional dissenting opinion, it has been generally accepted in this country that the salicyl group is not conjugated with glycine but is excreted unchanged in urine. Thus, there could be no natural salicyluric acid comparable to the chemical analogue hippuric acid. Now comes further desirable confirmation of the negative side from studies of benzoic acid by Quick<sup>1</sup> of the Laboratory of Surgical Research of Cornell University Medical College. Quick determined in dogs the effect on conjugation of benzoic acid with glycine of various chemical substitutions in the benzoic acid. For instance, when the hydroxyl group was in the ortho position, which, of course, gives salicylic acid, Quick found that there was almost a complete inhibition of the conjugation with glycine. The inhibitory effect appeared to be independent of the chemical nature of the group introduced, since the substitution of the bromo, iodo and nitro groups also impeded the union with glycine, not so, however, sub-

<sup>1</sup> Stokvis, B. J. *Nederl. tijdschr. v. Geneesk.* 2: 678, 1902.

<sup>2</sup> Jones, C. M. *Cecil's Textbook of Medicine*, ed. 2, Philadelphia, W. B. Saunders Company, 1930.

<sup>3</sup> Dieckmann, W. J. *Methemoglobinemia*, *Arch. Int. Med.* 50: 574 (Oct.) 1932.

<sup>1</sup> Quick, A. J. *Proc. Soc. Exper. Biol. & Med.* 29: 509 (Jan.) 1932.

stitutions in the meta and para positions. The introduction of the hydroxy group into benzoic acid also decreased its conjugation with glycuronic acid. Interference with this conjugation occurred after introduction of the chloro and nitro groups into the ortho position, but not after the methyl and amino groups. These results prove the fundamental importance of the position of certain chemical groups for metabolic and pharmacologic actions. Significant is the fact that Quick's results corroborate the negative results of attempts at isolation of salicylic acid in the urines of animals and human subjects medicated with salicylates. The results of these recent studies leave no doubt that the salicylates for the most part are excreted as such and not changed chemically in their passage through the body. For this reason they probably exert more definite and important pharmacologic actions and therapeutic effects than do the benzoates. The benzoates are rendered practically inert by one of nature's conjugating mechanisms. Quick's work still leaves the salicylates somewhat anomalous biochemically. However, the proof that their fate is definitely different from that of the benzoates now appears unassailable. It follows that similar biologic conjugation mechanisms do not necessarily or generally exist for chemically related substances. A small difference in chemical composition may apparently command a different mechanism for detoxication.

## Medical Economics

### NEW FORMS OF MEDICAL PRACTICE

#### 11 Hospital Insurance Schemes

##### PLANS IN THE UNITED STATES

Because it was one of the first and most widely discussed of hospital insurance schemes and therefore more or less of a model for many subsequent ones, the plan of Baylor University Hospital, Dallas, Texas, is first considered. The plan is thus described in the "Basis of Agreement" published by the hospital:

Baylor Group Hospitalization Plan assures hospital service in Baylor University Hospital when needed operating room service anesthetics and laboratory fees during period of hospitalization not to exceed 21 hospital days during any 12 months period. In case the assured party should necessarily be hospitalized more than 21 days then he shall be entitled to a discount of 33 1/3% from the regular hospital fees for the time after the first 21 hospital days. Does not include Oxygen tent X Ray special prescriptions\* serums doctor's fees either physician or surgical nor the services of a special private nurse but does include all usual hospital services of under graduate nurses nursing supervisors internes and house staff and routine medicines surgical dressings and hypodermics.

Does not apply after resignation or discharge from present employment. Must be collected and paid as a group. Only full time employees of the firm are eligible for the group. Personal identification must be made by some authorized representative of employer.

Does not apply to industrial employment hazards nor to employer's liability.

This agreement does not apply in case of purposely self inflicted in any nor obstetrical cases but in such cases the assured shall be entitled hereunder to a 50% reduction on regular hospital fees the discount applying only to obstetrical cases after a year of membership under this plan. Except for preliminary hospitalization pending diagnosis Baylor University Hospital is not prepared to care for and does not accept cases of pulmonary tuberculosis or chronic mental or nervous disorders or acute venereal infections or virulent contagions such as smallpox etc. All such cases need treatment in special hospitals and this group hospitalization plan shall not apply thereon after diagnosis.

In case of epidemic public disaster or other conditions occasioning an overcrowding of the capacity of Baylor University Hospital to such a degree that it is not possible to provide accommodations and in case private accommodations cannot be secured elsewhere in the city then in the face of such an emergency the responsibility of Baylor University Hospital under this contract shall be discharged by the refund to the assured of twice the amount that has been paid by the assured under

this contract during the twelve months immediately preceding, and such payment shall constitute a full and final discharge of the obligations of Baylor University Hospital hereunder.

All members of the Dallas County Medical Society are eligible to use the facilities of Baylor University Hospital and no patient can be admitted to Baylor University Hospital except under the care and authorization of some member of the Dallas County Medical Society, patient to leave hospital when discharged by doctor.

A statement prepared by Justin F. Kimball, executive vice president of Baylor University, to answer the numerous inquiries concerning the plan gives the further explanation of its workings:

We have in Baylor at the present about 6,000 members in this plan spread through some 40 groups. We could easily more than double this number. We have declined many groups but we feel that this is about the number that we can risk on our margin of unoccupied beds. During the past four months the total receipts from these groups has been about \$11,850.00 the total amount of the bills paid by these groups has been about \$11,000.00.

Baylor Hospital had at the time this description was prepared more than 8,000 members.

We believe that the following are the essential underlying principles of this group hospitalization plan:

1 The organization must deal with groups not with individual risks.  
2 Groups must be employed, full time wage earners. (Intermittent employment such as teaching nursing, etc. brings much higher actuarial risk.)

3 The total number of members—spread in all groups to make the law of averages safely apply—should be at least three to five thousand. A hospital cannot in fairness take a larger number of members than its marginal number of usually unoccupied beds will warrant. Even it must protect itself against over-commitment in the day of epidemic. A hospital is totally unlike an insurance company in this respect—its capacity has a rigid limitation not subject to quick or easy extension.

4 Group hospitalization should give only hospital service and should not in any case give service that in any way competes with the physician's professional service. You have to depend on your medical staff to protect the hospital from malingering of patients. Also remember that when you promise any single individual service to all members you lose the actuarial significance of a group.

5 We allow the patients under the group hospitalization full liberty of choice as to the physician treating him in the hospital.

6 A long time commitment to a fixed rate should be avoided. One of the best by-products of such group plan is that coming to the hospital with the bill already provided for educates patients to be hospital minded and will increase hospital patronage and eventually bring a higher group rate.

7 Different types of employed groups present varying actuarial risks as to sickness and differing desires as to the type of accommodations. For instance bank employees are better actuarial health risks than laundry employees but desire better accommodations so we make the same rate for both groups but contract for different accommodations for each group.

8 In our own hospital we have definitely adhered at all times to the policy of dealing directly with the groups through the employer or other representative and have never employed any outside selling organization or middleman representative. We feel that this is far the safer course.

9 Our accounting department charges all discounts and other allowances based on group membership to the respective accounts so that at all times we know the exact and real status of each group as an economic venture.

Similar plans were soon adopted by a number of other hospitals and the movement began to take on a wider scope. There were obvious objections to the individual plan in a locality containing a number of hospitals. It offered no choice of hospitals and rested on a somewhat forced monopoly of a large section of medical practice.

Two additional features soon entered the picture—the organization of a general scheme embracing several hospitals and the introduction of professional, profit-seeking promoters.

These plans are described by Robert Jolly, superintendent of Memorial Hospital, Houston, Texas, who has been an active participant in this evolution (*Hospital Management*, October, 1932, p. 19):

(1) A plan whereby one hospital using its own personnel as agents sells to employed groups contracts which assure them hospitalization in the particular hospital only. The money collected from such sales goes into that hospital's treasury.

(2) The same plan as (1) except that the hospital employs an outside agency to sell the contracts.

(3) A plan entered into by more than one hospital whereby the purchaser of contract may choose any one of the participating hospitals for admission. Such contract to be sold by an agent of the hospital group. The money collected is placed in a reserve fund against which the hospital charge \$5 per day for each patient and \$10 if operating room is used.

The third plan (3) above, with slight differences, is in operation in San Antonio and Houston, Texas. The promoting organization is the Hospital Service Company which operates

a sales organization, charges \$9.75 a year "payable \$1.50 in advance the first month of each contract year and 75c thereafter" each month. Six dollars of this annual payment is placed in a fund for payment of hospital bills according to a fixed scale, usually \$5 a day, with practically the same restrictions as already described in the Baylor plan. So far as can be determined, the additional \$3.75 a year is retained by the promoter to cover sales and other expenses and profits.

A number of organizations are already in the field looking for the profits to be gathered by securing control of a section of the market for hospital services. They are actively utilizing all the forces of skilful salesmanship to urge the adoption of schemes of hospital insurance and to insert themselves into the flow of income from patients to hospitals in order to tap that flow for their own profit.

One of these, which has organized several such plans, is the "M. L. Johnstone, Inc. Co-operative Hospital Service." This plan collects \$1 membership fees and 75 cents a month (\$9 a year) from industrial groups. The promoters retain the membership fee and \$2 out of each \$9 paid subsequently.

In a sample proposal, covering 4,500 members, the gross income is computed at \$125,000, "of this the hospital will retain \$99,000" and will pay the promoters and managers \$27,000, which is 21.42 per cent.

In the model plan described by M. L. Johnstone, Inc., it is estimated that the hospital at the end of three years "will have a surplus of \$18,000 which may be used towards general expenses, invested for betterments, or held as a cash reserve to guarantee execution of membership contract under peak conditions."

The promoters are to have full charge of the financing and are to "assign to the installation, operation and expansion of the method in your hospital a major staff of five persons as follows: Director, Organizer, who is to have a staff of solicitors, Actuarial Consultant, Certified Public Accountant, and a Resident Manager."

The hospital backers and friends pledge themselves to lend their prestige to assist in securing the approval of executives, the heads of great corporations and all other civic and medical leaders.

There are variations under each of these plans. While most of the promoting schemes depend on group sales to industrial groups, whose "sales resistance" can be broken down by pressure through the employer, the U. S. Travelers Hospitalization Corporation sells individual policies. The following paragraphs descriptive of this scheme are taken from a sales pamphlet issued by the corporation and entitled "Group Hospitalization."

The annual payment or subscription to be made by Certificate Holders is \$12.00 including X-Ray service, or \$10.00 not including X-Ray service.

The hospitalization service to be rendered by the Group Hospitals is as follows:

(a) To provide semi-private room, operating room, anesthesia, general nursing care, internes and house staff, dietitian, food, medicines and all usual service during period of hospitalization not to exceed 21 days within the period of one year covered by such certificate.

(b) It shall not include any special doctors' fees, either medical or surgical, nor the service of a private nurse.

Out of all payments or subscriptions made by Certificate Holders, U. S. Travelers Hospitalization Corporation will deposit in trust in one or more leading banks the sum of \$4.50 for each annual, or \$2.25 for each semi-annual payment or subscription received. The Group Hospitals shall be entitled to draw against this First Trust Fund the amount of their service charges in accordance with the rates agreed upon.

U. S. Travelers Hospitalization Corporation will also deposit out of such payments or subscriptions made by Certificate Holders an additional sum in a Second Trust Fund in the amount of \$2.00 for each annual, or \$1.00 for each semi-annual payment.

If the moneys in the First Trust Fund shall be exhausted the Group Hospitals shall be entitled in like manner to draw against the Second Trust Fund. Such drafts shall be made by letter by the Group Hospital to U. S. Travelers Hospitalization Corporation.

Any balance of the Second Trust Fund at the end of each calendar year, together with the balance of the payments of Certificate Holders, shall be retained by U. S. Travelers Hospitalization Corporation for maintenance of sales organization, publicity statistical department, compilation of hospital and health data, as well as for the corporate affairs of the Company and as charges for services.

The U. S. Travelers Hospitalization Corporation claims to utilize for the benefit of its certificate holders only those hospitals which are registered by the American Medical Association. The list of hospitals published by the Corporation includes

127 hospitals in thirty-four states and the District of Columbia, although it is stated that there are now about 200 hospitals giving hospital service according to the corporation's plans.

A group hospital plan which has been proposed to the Chicago Hospital Association suggests the formation of the Chicago Hospital Service Association, Inc., "for the purpose of acting solely as the fiscal agent for a group of hospitals which individually and jointly agree to provide hospital care to subscribers to the group hospitalization plan."

The dues are fixed at \$10 for each member of an employed group, with a provision that dues may be reduced to not less than \$8, "provided the percentage of subscribers and the nature of employment make such a group particularly desirable from the economic point of view." There is a further provision for annual dues of "\$12 for individual memberships of employed or non-employed persons, payable semi-annually in advance. Hospital benefits are extended only after a three-months' waiting period, except in the case of accidental injuries. Individual policyholders are not eligible for discounts on service or maternity cases."

This provision for individual memberships is an extension of the plan that may well have special dangers, especially as it is also suggested that "salesmen might be employed on a salary or commission basis to introduce the plan." The extra \$2 for individual membership might be used either as an additional security against the risks on such individual memberships or as an additional commission to overcome sales resistance in soliciting such persons. In either case it opens the door to a host of new problems and possible abuses.

There are the customary restrictions to twenty-one days' hospitalization, the exclusion of certain classes of disease, and the provision for a one-third discount on hospitalization after twenty-one days and of 50 per cent on "special and expensive medicines" and obstetric service ten months after date of membership.

The Chicago Hospital Service Association is to collect and hold the dues. "A substantial portion of such dues would be paid at the time when services are rendered to subscribers, the remainder being held for future distribution according to an agreed policy of the participating hospitals."

A Chicago corporation, the Hospitalization Service Co., Inc., is already operating, and claims to have signed contracts with a number of hospitals and physicians.

The president of this company is Edward B. Roberts, secretary and treasurer of the Dahlberg Corporation of America. There are fifteen members on the board of directors, nearly all of whom are officials of commercial organizations and none of whom are physicians.

This company offers a complete hospital and medical service, including house and office calls, an annual physical examination and complete maternity service. The charge is \$2 per month and solicitors are employed, who distribute return postal cards from house to house as a means of obtaining leads. While the post cards announce, as quoted above, "complete hospital medical care," and that "no physical examination is necessary," the contract with the hospital makes the usual exemptions of chronic and contagious diseases.

This contract with the hospital provides for the payment to the hospital of 50 cents a month or \$5 a year for the hospital service. For the "complete" service these payments are 75 cents a month or \$8 a year. Other clauses of the contract read as follows:

This agreement shall continue for a period of five years from this date, and shall be renewed for like periods at the end thereof unless first party shall advise second party at least thirty days prior to the end of any five year period of its desire to terminate, provided however that first party may terminate this agreement at the end of any \_\_\_\_\_ if there shall be less than \_\_\_\_\_ contracting members in "good standing" during the previous \_\_\_\_\_ by thirty days notice to second party, provided however that in the event of such cancellation service shall be given by first party to contracting members for such periods as such contracting members shall be paid in advance.

During the life of this agreement first party agrees not to enter into any similar agreement with any other persons, firms or organizations provided however that nothing herein shall prevent first party from agreeing to render group service to any one or more companies or corporations separately for the employees of such company or corporation.

It would appear from these documents that the company collects \$24 a year and pays from \$6 to \$8 of this to the hospitals and physicians who are to give the service. The latter

sum appears to be paid directly to the hospital, apparently under the supposition that its staff members are to make the home calls and give all other services without further remuneration. This conclusion is strengthened by a clause in the contract, of which the hospital is the "first party" mentioned, reading

(A) First party may designate the hospital or hospitals to which contracting members may be assigned and also may designate which member of the staff of first party shall render office or home medical service or which member of the staff of first party shall attend the patient in the hospital

(B) No contracting member may enter such hospital or a hospital patient until examined by a member of the staff of first party

(To be continued)

## THE PHYSICIAN'S INCOME TAX—1933

The taxpayer who is required to make a return must do so on or before March 15, unless an extension of time for filing the return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must contain a full recital of the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent of the amount of the tax due.

The normal rate of tax on individual citizens or residents of the United States under the Revenue Act of 1932, is 4 per cent on the first \$4,000 of net income in excess of the exemptions and credits, and 8 per cent on the remainder.

### WHO MUST FILE RETURNS

1 Returns must be filed by every person having a gross income of \$5,000 or more, regardless of the amount of his net income or his marital status. If the aggregate gross income of husband and wife, living together, was \$5,000 or more, they must file a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

2 If gross income was less than \$5,000, returns must be filed (a) by every unmarried person, and by every person married but not living with husband or wife, whose net income was \$1,000 or more and (b) by every married person, living with husband or wife, whose net income was \$2,500 or more. If the aggregate net income of husband and wife, living together, was \$2,500 or more, each may make a return or the two may unite in a joint return.

If the status of a taxpayer so far as it affects the personal exemption or credit for dependents, changes during the year, the personal exemption and credit must be apportioned, under rules and regulations prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, in accordance with the number of months before and after such change. For the purpose of such apportionment a fractional part of a month should be disregarded unless it amounts to more than half a month in which case it is considered as a month.

As a matter of courtesy only blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return, the taxpayer should obtain one from the local collector of internal revenue.

The following discussion covers matters relating specifically to the physician. Full information concerning questions of general interest may be obtained from the official return blank or from the collectors of internal revenue.

### GROSS AND NET INCOMES WHAT THEY ARE

**Gross Income.**—A physician's gross income is the total amount of money received by him during the year from professional work, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation and as compensation and profits from other sources.

**Net Income.**—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year, as stated before. These matters are fully covered in the instructions on the tax return blanks.

### DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The following statement shows what such deductible expenses are and how they are to be computed.

**Office Rent.**—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense, to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

**Office Maintenance.**—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

**Supplies.**—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using, for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies, and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equipment, "the useful life of which is short," may be deducted, but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

**Equipment.**—Equipment comprises property of more or less permanent value. It may ultimately be used up, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using", rather, it wears out.

Payments for equipment or nonexpendable property for professional use cannot be deducted. As property of this class may be named automobiles, office furniture, medical, surgical and laboratory equipment of permanent value and instruments and appliances constituting a part of the physician's professional outfit and to be used over a considerable period of time. Books of more or less permanent value are regarded as equipment, and the purchase price is therefore not deductible.

Although payments for equipment or nonexpendable articles cannot be deducted, yet from year to year there may be charged off against them reasonable amounts as depreciation. The amounts so charged off should be sufficient only to cover the lessened value of such property through obsolescence, ordinary wear and tear, or accidental injury. If improvement to offset obsolescence and wear and tear or injury has been made, and deduction for the cost claimed elsewhere in the return, claim should not be made for depreciation.

A hard and fast rule cannot be laid down as to the amount deductible each year as depreciation. Everything depends on the nature and extent of the property and on the use to which it is put. Five per cent a year has been suggested as a fair amount for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. The proper allowance for depreciation of any property is that amount which should be set aside for the tax year in accordance with a reasonably consistent plan, not necessarily at a

uniform rate, whereby the aggregate of the amounts so set aside, plus the salvage value, will at the end of the useful life of the property in the business equal the purchase price of the property or, if purchased before March, 1913, its estimated value as of that date or its original cost, whichever may be the greater. The physician must in good faith use his best judgment and make such allowance for depreciation as the facts justify. Physicians who, from year to year, claim deductions for depreciation on nonexpendable property will do well to make annual inventories, as of January 1, each year.

**Medical Dues**—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

**Postgraduate Study**—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

**Traveling Expenses**—Traveling expenses, including amounts paid for transportation, meals and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

AUTOMOBILES

Payment for an automobile is a payment for permanent equipment, and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages, etc.

Deductible loss through depreciation is the actual diminution in value resulting from obsolescence and use, and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer.

If the automobile is used for professional and also for personal purposes—as when used by the physician for recreation, or used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses, he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood.

What has been said with respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

**Laboratory Expenses**—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of other corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

**Losses by Fire, etc.**—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense, and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

**Insurance Premiums**—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment, and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be

included any automobile belonging to the physician and used for strictly professional purposes.

**Expense in Defending Malpractice Suits**—Expenses incurred in the defense of a suit for malpractice are deductible as business expense.

**Sale of Spectacles**—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

Association News

THE MILWAUKEE SESSION

Milwaukee Hotels

Below may be found a list of Milwaukee hotels and rates for rooms. On advertising page 37 of this issue of THE JOURNAL may be found this list together with an application form that may be used to secure reservations through the Subcommittee on Hotels of the Local Committee on Arrangements.

Hotels at Milwaukee

Name and Address	Single		Double		Suites
	Without Bath	With Bath	Without Bath	With Bath	
ABBOTT CREST 1226 W Wisconsin Ave	\$2 00-2 50	\$3 00-3 50	\$3 00-3 50	\$4 00-6 00	\$8 10
AMBASSADOR 2308 W Wisconsin Ave		2 75-4 00		5 50-7 00	10
ASTOR 924 E Juneau Ave		3 00-5 00		5 00-8 00	\$ 15
BELMONT 751 N Fourth St	2 00-2 50	2 50-3 00	3 00-3 50	3 50-5 00	
BLATZ 145 E Wells St	1 50-1 75	2 50-3 00	2 50-3 00	3 50-6 00	
CARLTON 1120 N Milwaukee St	1 50-2 00	2 50-3 50	2 00-2 50	3 50-6 00	6 00
COLONIAL 826 N Cass St		1 50-2 00		2 00-5 00	3 00-5
GLOBE 803 E Wisconsin Ave	1 50-2 00	2 50-3 00	2 50-3 00	4 00-5 00	
JUNEAU 807 815 E Wisconsin Ave			2 50-3 00	3 50-5 00	
KNICKERBOCKER 1028 E Juneau Ave		3 00-4 50		5 00-7 00	10-25
LA SALLE 729 N Eleventh St		2 50-3 00		3 50-6 00	5 10
MARTIN 707 E Wisconsin Ave	1 25-2 00	2 25-3 00	3 00-3 50	3 25-4 00	
MARYLAND 625 N Fourth St	1 50-1 75	2 50-3 00	3 00-3 50	5 00-7 00	
MEDFORD 605 N Third St	2 25-2 75	2 75-3 00	3 25-4 00	3 75-5 50	
MILLER 723 N Third St	1 25-2 00	2 50-3 50	3 00-5 00	4 00-5 00	
NEW PRISTFR 424 E Wisconsin Ave	2 50-3 00	3 50-5 00	4 00-5 00	5 00-8 00	10-0
PLANKINTON 609 N Plankinton Ave		3 00-5 00		5 00-8 00	12-15
PLAZA 1007 N Cass St		2 50-3 00		4 00-5 00	
REPUBLICAN 907 N Third St	1 50-2 00	2 50-5 00	2 50-4 00	3 50-6 00	\$ 12
ROYAL 435 W Michigan St	2 00-2 50		3 00-4 00	4 00-6 00	
SCHROEDER 643 N Fifth St		3 50-5 00		5 50-8 00	10-20
SEVEN SEVENTY MARSHALL 770 N Marshall St		2 50-3 00		3 50-5 00	
SHORECREST 1962 N Prospect Ave		3 50-4 00		5 00-7 00	\$ 20
TOWER 716 N Eleventh St		2 50-3 00		4 00-6 00	
WISCONSIN 714 N Third St	2 00-3 50	3 00-4 00	3 50-4 00	5 00-7 00	

The form that is printed in the advertising pages may be clipped and, when properly filled in, should be sent at once to Dr Harry J Heeb, Chairman of the Subcommittee on Hotels, 740 North Second Street, Milwaukee, Wisconsin.

If those who expect to attend the annual session of the American Medical Association will send in their applications

at the earliest possible time, there should be no difficulty encountered in securing satisfactory accommodations. Applicants for reservations are especially requested to include a second and a third choice in order that good accommodations may be assured if the desired reservation cannot be had at the hotel of preference.

## MEDICAL BROADCAST FOR THE WEEK

**American Medical Association Health Talks**  
The American Medical Association broadcasts on Monday and Wednesday from 9 45 to 9 50 a m (central standard time) over Station WBBM (770 kilocycles, or 389.4 meters).  
The subjects for the week are as follows:

January 16 Fatigue  
January 18 The Physician's Handicaps

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:  
January 21 Heat Massage and Exercise

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### CALIFORNIA

**District Child Health Conferences**—As an outgrowth of the recent California White House Conference on Child Health and Protection in San Francisco plans are being made for four district executive conferences to be held as follows:  
Southern district Los Angeles January 14  
Northern district Sacramento January 21  
Central district Fresno January 28  
North Coast district Oakland February 4

**Indigent County Relief Centralized**—All indigent relief in Alameda County including inpatient and outpatient care has been placed under the direction of Dr Benjamin W Black, medical director Highland Hospital Oakland. According to the November issue of *Modern Hospital* the change was brought about at a recent meeting of the county board of supervisors which also directed the county institutions commission to supervise relief work. County physicians now attending indigent patients will work under the direction of Dr Black and the commission which is also to develop a health department to cover the unincorporated territory in Alameda County.

**Lectures on Infections of Eye**—Dr Charles Weiss director clinical and research laboratories Mount Zion Hospital San Francisco will give six lectures beginning January 19 on bacteriology and immunology of infectious diseases of the eye. The lectures are open without charge to the medical profession and others interested. Following is the list of lectures:  
January 19 Summary of the Bacteriology of the More Common Infections of the Conjunctiva  
January 26 Recent Researches on the Etiology and Epidemiology of Trachoma  
February 2 Infections of the Cornea Iris and Lacrimal Apparatus  
February 9 Sympathetic Ophthalmia  
February 9 Serum Therapy Vaccine Therapy and Chemotherapy of Infectious Diseases of the Eye  
February 16 Immunologic Principles Underlying Nonspecific Protein Therapy  
February 21 Fungus Infections of the Cornea Conjunctiva and Lacrimal Duct

### FLORIDA

**Personal**—Dr Henry Hanson Jacksonville state health officer has been named chairman elect of the National Malaria Committee.

**Society News**—At a recent meeting of the Florida Medical and Medical Society Dr Samuel A Clark Lakeland was elected president. Dr Alva C Hamblin Valrico among others, spoke on "The Doctor's Part in Public Health."  
**Books Given to Board of Health**—About 300 medical books were given to the state board of health recently by Dr Raymond C Turk Ortega from his library. Dr Turk was state health officer of Florida from 1921 to 1925.

### ILLINOIS

**Society News**—The St. Clair County Medical Society was addressed in East St. Louis, January 5, by Dr William H Olmsted, St. Louis, on "Treatment of Diabetic Arteriosclerosis and Gangrene of Lower Extremities"—Dr Louis Rudolph, Chicago, spoke on "Management of the Occiput Posterior Position" before the Tri-City Medical Society at La Salle, January 3.—Dr William S Middleton, Madison, Wis., addressed the Peoria City Medical Society, January 3, on "Treatment of Lobar Pneumonia."

### Chicago

**Society Endorses Minority Report**—A resolution was recently adopted by the council of the Chicago Medical Society commending the signers of the minority report of the Committee on the Costs of Medical Care as expressing the opinions of the majority of the medical profession.

**Dr Martland to Give Hektoen Lecture**—Dr Harrison S Martland, chief medical examiner for Essex County, New Jersey, will deliver the ninth Ludwig Hektoen Lecture of the Frank Billings Foundation, February 24. His subject will be "Recent Progress in the Medicolegal Field in the United States."

**Faculty Presents Program**—At a meeting of the Chicago Medical Society, January 18, members of the faculty of Loyola University School of Medicine will present the following program:

Basic Factors in Edema and Its Management Dr Italo F Volini  
Ambulatory Treatment of Peptic Ulcer Dr Sidney A Portis  
Tuberculous Anal Fistula Dr Clement L Martin  
Early Diagnosis of Carcinoma of the Cervix, Dr Henry Schmutz

### INDIANA

**Oldest Practitioner Honored**—The Wabash County Medical Society honored Dr James T Biggerstaff, Wabash, when it recently named him president of the society and made him an honorary life member. Dr Biggerstaff is said to be the oldest practitioner in the county. Other officers elected are Drs Lester B Rhamy, vice president, and Robert M LaSalle, secretary.

**State Board Observes Fiftieth Anniversary**—With its November bulletin the Indiana State Board of Health commemorated the fiftieth year of its founding. Although the organization meeting of the board was held Nov 3, 1881, the first regular session convened, Jan 19, 1882. During this time six secretaries have served the board:  
Dr Thaddeus M Stevens 1882-1883 Dr E R Hawn 1883-Dr E S Elder 1883-1884 Dr Charles N Metcalf 1884-1886 Dr John N Hurty 1886-1922 Dr William F King 1922—  
The bulletin is devoted to articles describing the growth of the department since its inception.

### KANSAS

**Society News**—A joint meeting of the Barton, Ford and Reno county medical societies was recently held in Great Bend, and Dr Clifford L Hooper, Dodge City, spoke on state medicine report on treatment of chronic osteomyelitis with maggots.—Dr Paul A Gempel, Kansas City Mo., addressed the Clay County Medical Society, Nov 10, 1932, on "Management of Posterior Presentations."—Dr Archibald E Spelman Halstead, addressed the Sedgwick County Medical Society, Wichita, Dec 6 1932, on "Principles of Drainage," and Dr Ray A West "The Doctor and the Nurse," Dr Richard L Sutton Kansas City showed pictures made on a trip to the arctic before the society, Dec 16, 1932.

### MARYLAND

**Society News**—Dr Gabriel Tucker, Philadelphia, addressed the Allegany-Garrett County Medical Society, Cumberland Dec 16 1932, on "Broncho-Esophagocopy in the Diagnosis and Treatment of Disease."—The Baltimore City Medical Society at a joint meeting with the District of Columbia Medical Society, January 11, heard addresses by Drs Charles Wainwright Jr on "Bromide Poisoning," James M H Rowland Lower Maternal Death Rate, and John M T Finney, Jr "Appendicitis: A Review of 3913 Cases."—Dr Horatio A Dorman Washington D C, will discuss "Personal Experiences with Transurethral Prostatic Resections" before the Baltimore-Washington Urological Society, January 20.—The Osler Historical Society will hear Dr Christian Deetjen talk on Wilhelm Konrad von Roentgen discoverer of the x-rays at its meeting January 17. Dr David I Macht will discuss a collection of Osler's prescriptions and Osler's materia medica.



## MASSACHUSETTS

**Obstetric Meeting**—The New England Obstetrical and Gynecological Society, at its fourth annual meeting in Boston, Nov. 30, 1932, heard addresses by the following physicians, among others:

William F. Hoyt, Rupture of the Graafian Follicle, the Corpus Luteum and Small Ovarian Cysts as Causes of Acute Abdominal Emergencies  
Jacob Lerman, Effect of Thyroid States on Pregnancy and Menstruation  
Joe Vincent Meigs, Human Ovary After Injections of the Anterior Pituitary Luteinizing Hormone  
Tracy B. Mallory, Ectopic Decidua  
Aubrey O. Hampton, Roentgen Ray Treatment of Malignant Disease of the Pelvic Organs  
Grantley W. Taylor, Carcinoma of the Breast During Pregnancy and Before the Menopause  
John C. V. Fisher, Methods of Obstetric Analgesia  
James C. Janney, Some Aspect of Kidney Function in Pregnancy

Clinics and a symposium on sterility were conducted. At the evening dinner meeting Dr. Barton Cooke Hirst, Philadelphia, was the speaker.

**Bills Introduced**—H. 121 seeks to require each city or town to provide for the treatment, either in a hospital or as outpatients, of indigent persons suffering from gonorrhea or syphilis. H. 122 seeks to forbid discrimination against the treatment of venereal diseases in the outpatient department of any general hospital supported by taxation in any city or town where special hospitals, other than hospitals connected with penal institutions, are not provided for the treatment of those diseases at public expense, but any such hospital may establish a separate ward for the treatment of venereal diseases. H. 123, to amend the law prohibiting the divulging of hospital, dispensary, laboratory or morbidity reports and records pertaining to gonorrhea or syphilis, proposes that that law shall not prevent a physician from informing the spouse of a patient having gonorrhea or syphilis of the patient's infection when in the opinion of the physician that information is necessary to protect the patient's spouse. H. 298 proposes to authorize the department of public health to erect one laboratory and experimental hospital and one regional hospital of at least 100 beds in each county.

## MICHIGAN

**Series of Clinics**—The Wayne County Medical Society has announced a series of clinics to which all physicians and health workers of Detroit are invited; the lectures to be given in the Herman Kiefer Hospital on Wednesdays. Preventive medicine in periodic health examinations will be the general theme for all the clinic lectures and demonstrations, newspapers reported.

**Society News**—Dr. Edgar E. Martner, Detroit, gave the sixth talk in a series arranged for the staff of the Children's Center of the Children's Fund of Michigan, Nov. 24, 1932, on "Significant Factors Regarding Infectious Diseases."—The East Side Medical Society, Detroit, heard Dr. Edward Cathcart discuss "Pyelography in General Medical Diagnosis," November 10.—At a meeting of the Blackwell Woman's Medical Society, November 21, Dr. Harry M. Kirschbaum, Detroit, spoke on "Operative Obstetrical Procedure and a Demonstration of Modern Anesthesia in Obstetrics."—The Dearborn Medical Society was granted a charter as a branch of the Wayne County Medical Society, November 18. It is the fourth branch of the county society.—Dr. David Steel, Cleveland, addressed the medical section of the Wayne County Medical Society, December 13, on "Unusual Aortic Aneurysms and Their Roentgen Diagnosis."—Dr. Carl G. Weltman, Detroit, addressed the St. Clair County Medical Society in Port Huron, December 3, on "Stone in the Kidney."

## MISSOURI

**Society Offers Gratuitous Care**—The Howell-Oregon-Texas Counties Medical Society, West Plains, at a meeting, October 27, unanimously approved a resolution offering gratuitous services of its members to the poor. The society will cooperate with reputable organizations, but its preference will be for individual rather than group examinations.

**Museum and Medical Society Hold Joint Meeting**—At a meeting of the Greater St. Louis Museum of Natural History and the St. Louis Medical Society, Dec. 20, 1932, Dr. William W. Graves presented a death mask of John Hunter. Dr. Francis L. Reder, president of the society, gave the speech of acceptance. Dr. Robert E. Schlueter spoke on John Hunter, 1728-1793, the man and his spirit. An address entitled "An Arctic Safari—with Camera and Rifle in the Land of the Midnight Sun" was presented by Dr. Richard L. Sutton, Kansas City.

**Dr. Howard Resigns**—Dr. Harvey J. Howard, since 1927 professor of ophthalmology, Washington University School of Medicine, St. Louis, recently resigned in order to enter private

practice in his specialty in St. Louis. *Science* reports Dr. Howard was head of the department of ophthalmology, Peiping Union Medical College, Peiping, from 1918 to 1927. Since the opening in 1928 of the research center for diseases of the eye, ear, nose and throat at the Washington University School of Medicine, he has been in charge there of ophthalmic research.

## NEW JERSEY

**Society News**—Dr. William Worthington Herrick, New York, among others, addressed the Bergen County Medical Society, Hackensack, Dec. 13, 1932, on toxemias of pregnancy.—Dr. Arthur C. Morgan, Philadelphia, addressed the Camden County Medical Society, Camden, January 3, on the report of the Committee on the Costs of Medical Care.

**Practical Lectures**—Continuing the series of Friday afternoon practical lectures begun in the autumn, the Jersey City Medical Center is presenting the following series for January:

Dr. John F. Erdmann, New York, Recognition and Treatment of Postoperative Complications in Abdominal Surgery, January 6  
Dr. Albert F. R. Andresen, Brooklyn, Gastrointestinal Manifestations of Food Allergy, January 13  
Dr. Edward L. Keyes, New York, The General Practitioner's Problem in the Management of Prostatic Retention, January 20  
Dr. Lewis D. Stevenson, New York, Demonstration of a Routine Neurological Examination, January 27

## NEW YORK

**Hospital News**—Dr. Adrian S. Taylor, Birmingham, Ala., was appointed superintendent and surgeon-in-chief of the Clifton Springs Sanitarium and Clinic, Dec. 15, 1932. Dr. Taylor, a graduate of the University of Virginia Department of Medicine, Charlottesville, served in the U. S. Public Health Service and spent several years in China as professor of surgery at Peiping Union Medical College. Since 1927 he has engaged in practice in Birmingham.

## New York City

**New Gastro-Enterologic Society**—The Society for the Advancement of Gastro-Enterology was recently formed with a membership of metropolitan gastro-enterologists. Officers are Drs. Gustave Randolph Manning, president, Isidor L. Ritter and Elihu Katz, vice presidents, William C. Jacobson, secretary, Samuel Mufson, treasurer, and Samuel Weiss, editor. An advisory board has been formed of the following physicians: Edward L. Kellogg, Max Einhorn, Jacob Kaufmann, Anthony Bassler, Albert F. R. Andresen, Harlow Brooks, all of New York; Seale Harris, Birmingham, Ala.; William Gerry Morgan, Washington, D. C.; and Martin E. Rehfuess, Philadelphia. Although the society is limited to New York at present, its scope may be extended at the discretion of the board. At the monthly meeting, Dec. 28, 1932, Dr. Einhorn sketched the development of the specialty; Dr. Kellogg gave a lantern demonstration of duodenal problems.

**Society News**—At the annual meeting of the New York Academy of Medicine, January 5, Dr. John A. Hartwell, retiring president, gave an address on "Problems Facing the Academy" and Dr. Bernard Sachs, incoming president, on "The Academy: Its Relation to the Art and Practice of Medicine in New York." The seventh Friday afternoon lecture was delivered, January 6, by Dr. William P. Graves, Boston, on "Menopause Disorders," and the eighth by Dr. James Alexander Miller, January 13, on "The X-Rays in the Diagnosis and Study of Pulmonary Tuberculosis."—The program of the Medical Society of the County of New York, Dec. 28, 1932, presented the following speakers: Dr. Iago Galdston, "The Economics of Socialized Medicine," Michael Davis, Ph.D., Chicago, "Medical Service on an Insurance Basis" and Henry F. Vaughan, Dr. P. H., Detroit, "Participation of the Physician in Public Health Work."—The New York Physicians-Yorkville Medical Society was recently formed by the amalgamation of the two organizations represented in the title.—Dr. Edward M. Livingston addressed the Bronx County Medical Society, Dec. 21, 1932, on "Interpretation of Abdominal Pain."—Dr. Alexander Lambert addressed the Medical Society of the County of Queens, January 6, on pneumonia.

## OHIO

**Personal**—Dr. Mont R. Reid, Christian R. Holmes professor of surgery, University of Cincinnati College of Medicine, Cincinnati, has been appointed director of surgical service at Cincinnati General Hospital.—Dr. Roy E. Bushong, director of the Milwaukee County Mental Hygiene Clinic, Milwaukee for the past six years, has been appointed superintendent of the Lima State Hospital for the Criminal Insane, succeeding the late Dr. Wilhelm H. Vorbau. Dr. Bushong was formerly con-

nected with state hospitals at Athens and Toledo—Dr Brinton J Allison, Oak Hill, has been appointed health commissioner of Jackson County

**Testimonial to Obstetricians**—Eight members of the Cincinnati Obstetrical Society were guests of honor at a banquet at the Hotel Sinton-St. Nicholas, Dec 8, 1932, given by the society as a testimonial to their support in maintaining its high standards for thirty or more years. Dr Charles E Iliff, president of the society, presided, and Drs Charles D Heisel and Charles E Hauser made addresses entitled, respectively, "The Obstetrical Society—Past and Present" and "The Old Guard". The physicians and the years in which they became associated with the society were: Drs William H Wenning, 1883, Rufus B Hall 1888, Leroy S Colter 1895, Magnus A Tate, 1896, Edwin W Mitchell, 1885, William D Porter, 1892, James Ambrose Johnston, 1895, James W Rowe, 1903

## PENNSYLVANIA

**Illegal Practitioner Fined**—J J Zimbo, Shamokin, pleaded guilty recently to a charge of practicing medicine without a license. He was fined \$200 and costs of the prosecution after he had promised to cease practice and to leave the state.

**Society News**—Mr William A Challener, attorney for the Allegheny County Medical Society, addressed the society, among others, December 20, on "The Medical Expert Witness," and Dr John H Alexander, "The Pelvic Colon—Its Importance in Lesions of the Left Lower Quadrant."—Dr Joseph W Piekarski, Warrior Run, presented a paper on pneumoconiosis before the Luzerne County Medical Society, Wilkes-Barre at the November meeting.—The annual meeting of the Pennsylvania Tuberculosis Society will be held in Lancaster, January 19-20. Topics for the sessions are "Surgery in Tuberculosis," "Control of Tuberculosis in Pennsylvania," and "Means of Discovery and Prevention of Tuberculosis in Young People." Among speakers will be Drs John B Flick and Louis H Clerf, Philadelphia, Jay Arthur Myers Minneapolis, and Theodore B Appel, Harrisburg.—Dr Catharine MacFarlane, Philadelphia, addressed the Harrisburg Academy of Medicine, Dec 20 1932, on cancer of the uterus. Dr George R Moffitt, retiring president, will give an address, January 20 on cancer research.—Dr Paul R Sieber, among others addressed the Pittsburgh Academy of Medicine, Dec. 13, 1932, on "Post-Traumatic Headache and Its Treatment by Lumbar Insufflation."—Dr Arthur C Morgan, Philadelphia, addressed the Elk County Medical Society, St. Marys, Nov 28, 1932, on "Public Health Consciousness."

## Philadelphia

**Discussion of Medical Economics**—The regular meeting of the Philadelphia County Medical Society, January 11, was devoted to discussions of medical economics. The speakers were as follows:

- Dr Charles Falkowsky Jr, Scranton. The State Society's Participation in the Movement for Recovering the Physician's Vanishing Income.
- Dr Harry B Wilmer. Relation of the Hospital Management to Medical Economics.
- Dr Lyn Waller Deichler. Relation of the Outpatient Department to Medical Economics.
- Dr Francis Ashley Faught. The Questionnaire of the Philadelphia County Medical Society—Summary.
- Dr Seth A Brumm, Our Opportunity—Shall Medicine Survive or Be Submerged?

**Society News**—Dr Eldridge L Elhason delivered the annual oration of the Philadelphia Academy of Surgery, January 2, on "The Surgery of Diabetic Gangrene." Drs George M Dorrance and Brady A Hughes presented a review of thirty cases of carcinoma of the breast.—Dr George E Pfahler addressed the Philadelphia Roentgen Ray Society, January 5, on "Roentgen-Ray Diagnosis of Mediastinal Tumors and Their Differentiation."—At the meeting of the Obstetrical Society of Philadelphia January 5 the program included addresses by Drs Abraham I Zisman on "The Incidence and Significance of False Reactions with the Aschheim-Zondek and Oestrin Pregnancy Tests" and Charles Mazer and Louis I deiken "The Value of the Aschheim-Zondek Reaction in the Diagnosis and Prognosis of Chorionepithelioma."—Dr Hans Zinner, Boston addressed the College of Physicians of Philadelphia January 4 on the Rickettsia group of diseases.—Dr Harvey L Schock was elected president of the Association of Ex-Residents and Residents of the Philadelphia General Hospital at the annual dinner Dec. 6, 1932. The two hundredth anniversary of the hospital formerly called "Old Blockley" was celebrated at the meeting.—Speakers before the Philadelphia Urological Society Dec 19 1932 were Dr Thomas C Stellwagen Jr on "Heminephrectomy, Indications and Contraindications" and Max Trumper, Ph D, Urology Biochemistry.

## WASHINGTON

**Course on Heart Disease**—The Seattle Academy of Internal Medicine presented a course of didactic and practical instruction on the normal and pathologic conditions of the cardiovascular system, given by Dr Hugo Roesler, associate professor of radiology, Temple University School of Medicine, Philadelphia, Dec 27-31, 1932. Dr Roesler addressed the King County Medical Society, Dec 28, 1932, on "Methods of Cardiovascular Study by the Roentgen Ray."

## GENERAL

**Cleanliness Institute Discontinued**—Cleanliness Institute, New York, established in 1927 by American soap manufacturers, has been discontinued. After March 1 the National Tuberculosis Association, 450 Seventh Avenue, New York, will distribute the educational material created by the institute.

**Prize for Essay on Goiter**—The American Association for the Study of Goiter again offers \$300 as a first award and two honorable mentions for the three best essays based on original research work on any phase of goiter, to be presented at its annual meeting in Memphis, Tenn, May 15-17. The first award, presented at the meeting in Hamilton, Ontario, Canada, was given to Dr Donald McEachern, Baltimore, for his essay on "A Consideration of the Mechanism of Hypertrophy Based on Its Effect on Cardiac and Skeletal Muscle." Competing manuscripts for the 1933 award must be in English and submitted to the corresponding secretary of the association, Dr Julius R Yung, 670 Cherry Street, Terre Haute, Ind, not later than April 1. Manuscripts arriving after this date will be held for the next year or returned at the author's request.

**Society News**—The American Society for the Study of Arthritis met in Boston, Dec. 2, 1932, with a program including the following speakers: Drs Francis M Rackemann, Boston, on "The Role of Allergy in Arthritis"; William W Lermann, Pittsburgh, "The Gastro-Intestinal Tract in Relation to Arthritis"; Reginald Burbank, New York, "Arthritis from the Standpoint of the Patient"; and Lazaros G Hadjopoulos, New York, "A Study of Streptococci."—Dr Walter B Martin, Norfolk, Va, was elected president of the Seaboard Medical Association at its recent annual meeting in Rocky Mount, N C. Drs William B Kinlaw, Rocky Mount, Oscar R Yates, Suffolk, Va, and John C Tayloe, Washington, N C, were elected vice presidents, and Dr Clarence P Jones, Newport News Va, reelected secretary. The next meeting will be in Norfolk.—Dr James Ramsay Hunt, New York, was elected president of the Association for Research in Nervous and Mental Disease at the close of the annual meeting in New York Dec. 29 1932. Drs Charles Macfie Campbell, Boston, and Earl D Bond, Philadelphia, vice presidents, and Thomas K. Davis, New York, secretary, reelected.—William Mansfield Clark Ph D, Baltimore, was elected president of the American Society of Bacteriologists at the annual meeting in Ann Arbor Mich, Dec 30, 1932. Dr Milton J Rosenau, Boston, vice president, and James M Sherman, Ph D, Ithaca, N Y, secretary, reelected.

**Foundations Decrease Philanthropic Expenditures**—A survey of philanthropic foundations recently completed by the Twentieth Century Fund revealed that in 1931 the field of medicine and public health received the largest share of donations, a total of \$17,144,000, or 31.4 per cent of the grand total of all recorded disbursements. According to the New York Times, 102 American foundations in 1931 disbursed \$54,600,000 for philanthropic purposes. Ninety-one foundations reported the previous year, but, it was stated "foundation grants appear to have declined 23.7 per cent in 1931, compared with 1930. This decline is about in proportion to estimates of the reduction in the national income as a whole during the same period, which is put at 20 per cent." Education holds the second place in appropriations with total grants amounting to \$13,579,000, or 24.9 per cent. These two fields of interest alone have received \$30,723,000, or 56.3 per cent of the total. Child welfare was given only 2.3 per cent of the total and social welfare reached only 6.4 per cent of the total for all fields put together. The survey pointed out, it was said, that the 1931 total given for social welfare, however inadequate, had increased 40 per cent over the previous year, while grants in other fields had generally declined. The Rockefeller group of philanthropic organizations leads the list of donors, the grants aggregating \$29,634,000, or 54.3 per cent of the total given away in this country. Second place was held by the Carnegie group of organizations with grants of \$8,991,000, or 16.5 per cent of the total. The General Education Board, although it remained the largest spender in 1931, cut its grants to \$15,876,000 from \$29,787,000 the previous year. In addition to the Rockefeller

and Carnegie disbursements, which together accounted for 70.8 per cent of the annual national philanthropy, other large foundations include

Duke Endowment, \$3,754,000  
Julius Rosenwald Fund, \$2,367,000  
Womissing Foundation, \$1,130,000  
Children's Fund of Michigan, \$871,000  
Commonwealth Fund, \$847,000  
Milbank Memorial Fund, \$823,000  
Murry and Leonie Guggenheim Foundation, \$401,000  
Russell Sage Foundation, \$387,000

In general, it was stated, the survey found foundations "less ready by 30 per cent to finance educational agencies in 1931 than in 1930, while research grants declined 13.8 per cent, and agencies of social action received 3.5 per cent less than the previous year."

## Government Services

### Report of Surgeon General of Navy

Motor vehicle accidents caused more damage to the personnel of the U. S. Navy during the calendar year 1931 than any other group of hazards, being responsible for 81 deaths and 1,256 hospital admissions, the annual report of Surg. Gen. Charles E. Riggs shows. The number of deaths from this cause was more than twice the number from drowning, which was until 1930 the leading cause of death in the navy. Most of these accidents, which were principally responsible for an increase over the preceding year from 389 to 391 deaths, occurred while the victims were on leave. Of the total number of deaths, 216 were caused by injuries, 172 by disease and 3 by poisoning. There were 40 deaths from drowning, of which 26 occurred as a result of naval and military hazards and 11 from industrial and miscellaneous hazards, 3 were suicides. The death rate from aeronautic activities has progressively declined during the past ten years, the fatality rate per 10,000 flying hours in 1931 being 0.7, compared with 0.8 in 1921, 23 deaths occurred from flight hazards in 1931. Four war casualties were reported as a result of military operations in Nicaragua. There were no major disasters during the year, although 5 deaths were caused by the explosion of an anti-aircraft gun and 2 occurred in the Nicaraguan earthquake. There were 29 suicides and 6 homicides. Among diseases the leading causes of death were diseases of the circulatory system, with 26 deaths, pneumonia, 22, tuberculosis, 17, influenza, 10, abscess, 10, and appendicitis, 10. The hospital admission rate for 1931 was 565 per thousand for all causes, an increase from 520 in 1930, principally due to a higher prevalence of influenza and other respiratory diseases. The average number of sick days per admission was 18.8, the lowest since 1925. There were 18,273 admissions with respiratory disease, not including tuberculosis, 2,384 were patients with influenza. Epidemics of influenza developed in several ports and on shipboard, the largest numbers of cases having been reported from Quantico, Va., with 319, and the U. S. S. *Lexington*, with 217. Only six cases of diphtheria occurred in 1931, in contrast to 76 cases with four deaths in 1930. Eighty cases of scarlet fever with one death were recorded for the year, 24 of the cases at the Naval Academy, Annapolis. Venereal disease was second in number of admissions, with 15,425. Wounds and injuries were third with 7,188. During the year 57,431 persons were treated in naval hospitals, with a total of 2,221,514 treatment days, more than half of those treated were patients of the Veterans' Administration. Fourteen new medical officers were commissioned during the year and 36 were separated from the service, leaving 904 in the medical corps as of June 30, 1932. In the division of aviation medicine were 47 qualified flight surgeons, 27 under flight orders. Research in this division was directed to studies of carbon monoxide with relation to aircraft and of artificial supplies of oxygen for high altitude flying. Studies of personality problems have been continued and the division now has more than 1,300 case reports from which information valuable in the selection of pilots has been extracted. During the last year hospitals at Newport, R. I., Puget Sound, Wash., and Chelsea, Mass., were enlarged and architects are now drawing plans for a new \$1,000,000 hospital in Philadelphia. Under the direction of the Naval Medical School, Washington, D. C., research has been conducted on the medical aspects of the submarine "lung," submarine air purification, deep-sea diving and the physiologic action of mustard gas. The total amount appropriated for the Bureau of Medicine and Surgery for the fiscal year 1932 was \$3,242,560, of which only \$2,167,730.83 was expended a saving of 33.15 per cent. The average per diem cost of hospitalization was reduced from \$4.55 for 1931 to \$3.90 for the fiscal year 1932.

### Annual Report of Veterans' Administrator

The report of the first year of the consolidation of all veterans activities under a single jurisdiction indicates that economies in operation and better service to beneficiaries resulted from the change. Because of legislation permitting benefits to veterans regardless of the origin of their disabilities, and because of the economic stringency, the number of beneficiaries has increased 20 per cent during the past fiscal year. The total number of veterans receiving benefits, June 30, 1932 was 1,278,046, an increase of 198,059 over the preceding year. The average per diem rate for veterans' hospitals during the fiscal year was \$3.44, a decrease of 28 cents from that of the previous year. Administrative costs decreased from 3.88 per cent to 3.78 per cent of the total disbursement. Economies were effected by consolidation of veterans' homes, hospitals and regional offices. The total hospital load, June 30, was 43,841, an increase of 8,702, or about 25 per cent over 1931, the increase includes, however, about 4,174 patients in veterans' homes who have not previously been included as part of the load of the veterans' administration. Of 39,393 patients hospitalized under the veterans' act of 1924, 15,460 were World War veterans receiving care for service-connected disabilities while 21,655 were under treatment for non-service-connected disabilities, the remaining number were veterans of other wars. Thus, 59 per cent of the hospital load is made up of patients with non-service-connected disabilities, as compared with 14 per cent in 1925, the first year after passage of the act authorizing treatment for that class of disabilities. This year 15 per cent of the patients had tuberculosis, 46 per cent were suffering from neuropsychiatric diseases, and 39 per cent from general medical and surgical conditions. There were during the fiscal year 148,662 admissions to hospitals, an increase of 36 per cent over 1931. The statistics include for the first time patients in veterans' homes. Of the total admissions, 12,868 were for tuberculosis, 7,350 for psychotic diseases, 14,206 for other neuropsychiatric disorders and 114,238 for general medical and surgical conditions. About 86,000 surgical operations were performed. A total of 2,057,712 physical examinations were made in regional offices during the year, an increase of more than 100,000 over the previous year, 4,175 patients were admitted to the four diagnostic centers. During the year 142,216 patients were discharged after an average stay of seventy-seven days in the hospital. Discharges of patients after treatment for pulmonary tuberculosis numbered 12,905, those for neuropsychiatric diseases, 19,799, those for general conditions, 109,512. The principal psychosis treated was dementia praecox and the greatest number of recoveries took place in the alcoholic psychoses. About 21 per cent of the general patients were treated for diseases of the digestive system. The next largest group received treatment for diseases of the ear, nose and throat. Deaths of veterans in hospitals amounted to 6,972, of which 1,787 were caused by tuberculosis. Cancer and other malignant tumors ranked second, with 665 deaths, about 10 per cent of the total number. There were 113 deaths from suicide, homicide and accident. At the end of the year there were in operation fifty-six veterans' hospitals with a capacity of 29,833, two new hospitals having been opened during the year at Indianapolis and at Waco, Texas. This figure does not include 6,739 beds in veterans' homes. Ten new hospitals and fourteen additions are now under construction (THE JOURNAL, Dec 17, 1932, p. 2123). In addition to its own hospitals the administration made use of 8,825 beds in other government hospitals and a number in civilian institutions. It is estimated that the construction now authorized will provide facilities sufficient for the hospital load through the year 1937, about 46,500 beds. Estimates beyond that year indicate that facilities must be materially increased if veterans are given mandatory right to hospitalization without regard to the origin of their disabilities, the administrator points out. Net operating expenses for all hospitals for the past fiscal year, which does not include expenditures for new construction or expenses for the diagnostic centers, amounted to \$31,995,632.01. Disability compensation from the administration during the year amounted to \$189,540,380.76, paid to 328,658 veterans, 29,000 more than in 1931. Neuropsychiatric diseases were the major disability in 21 per cent of the cases and tuberculosis in 19 per cent. At the end of the year, death compensation was being paid to dependents of 97,448 veterans in the sum of \$36,715,575.33. Disability allowances to veterans with 25 per cent or more permanent non-service disabilities amounted to \$75,458,233 awards having been made to 407,584 veterans for the year, the second in which this form of benefit has been paid. Net disbursements for all activities of the administration during the year aggregated \$869,099,937.38. On June 30 there were 36,818 employees on the rolls of the administration, whose salaries amounted to \$61,291,367.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Dec 17, 1932

#### The Reform of Medical Education

The defects of medical education, as is well known, particularly the overloaded curriculum, have given rise to much discussion. At the invitation of the University of London, the Universities of Oxford and Cambridge and the Royal Colleges of Physicians and Surgeons have appointed representatives to consider, with those of the University of London, the present defects of the medical curriculum and to make suggestions for reform. The University of London was led to take action by a recommendation of the board of the faculty of medicine, which has been giving consideration to various criticisms of the medical curriculum. The board was also aware that the present position of medical studies was viewed with concern by other bodies and that action by the University of London would be welcomed. Representatives of the conference are leading teachers. They include Sir Farquhar Buzzard, regius professor of medicine, University of Oxford, Dr W. Langdon Brown, regius professor of medicine, University of Cambridge, Dr A. M. H. Gray, dean of the Faculty of Medicine, University of London, Lord Dawson of Penn, president of the Royal College of Physicians, Sir Holburt Waring, president of the Royal College of Surgeons. At the first meeting, Lord Dawson was elected chairman. The conference intends to call evidence and to review the whole course of medical education.

#### Canada's Radium Supplies

It is announced from Vancouver that the Great Bear radium field has ended its first year of active development and that the prospects seem to bear out the estimates of the mining assayers that radium deposits have been discovered which will rival, if they do not exceed, in value those of the Belgian Congo now the world's main source of supply. The radium field on the shore of Canada's largest expanse of fresh water has over 800 miles of impassable swamp and muskeg country between it and the northern terminal of the railway at Watways, Alta. Radium ores are now assaying \$6,250 to the ton. A high-valued silver deposit is mingled with the pitchblende that contains the radium. There are other metals—copper in vast quantity, gold assaying \$25 to the ton, cobalt, bismuth, manganese and coal—but none of these can be mined at present freight rates.

#### The Prevention of Tuberculosis of Bovine Origin

Sir Hilton Young, minister of health, received a deputation from the People's League of Health asking the government to take steps to increase the safety of milk. Lord Moynihan said that impure milk was responsible for the spread of many diseases, particularly tuberculosis. The ideal method of prevention would be insuring the purity of raw milk but failing this pasteurization should be adopted. He did not believe in the objections urged against it for any diminution in the nutritive value due to pasteurization could easily be remedied by the supply of other articles of diet. Dr W. G. Savage, health officer for Somersetshire and a leading authority on milk supply, said that at present no urban area had power to protect its milk supply. The deputation desired to urge on the government three lines of action: (1) steps to reduce bovine tuberculosis; (2) encouragement of tuberculin tested herds; and (3) pasteurization of milk. The deputation was not asking for universal pasteurization at present, however, but only that municipalities should be enabled to apply to the minister of health for power to require that all milk sold in their districts should be derived from tuberculin tested herds or pasteurized.

The minister of health expressed full sympathy with the desire of the deputation. He had been much interested in the expert views expressed on pasteurization, and he proposed to ask the Cattle Diseases Committee of the Economic Advisory Council to consider the subject and advise on it.

#### Delay in Operating for Cancer: Lord Moynihan's Views

Speaking at a hospital meeting in Manchester, Lord Moynihan said that cancer was the only one of the six great killing diseases in this country that showed any increase in the last twenty years. While the average death rate from all causes had gone down 32 per cent, the cancer death rate had increased 20 per cent, and in the last seventy years more than fivefold. One death in every seven of persons over 35 years of age was due to cancer, yet cancer in its early stages was completely curable. The Ministry of Health statistics showed that 71.4 per cent of persons who had been treated for grade 1 cancer of the breast were alive and well without any evidence of disease ten years after operation, and if deaths from other causes among these cases were excluded, the survivors ten years after operation were 87.5 per cent. Why were equally good results not always obtainable, and on whom should the blame be laid? The medical profession must take a share of it. Too many physicians were still skeptical about the good results from surgical treatment, and in too many cases delayed advising operation and allowed the patient to drift into the condition which made recurrence after operation inevitable. "Wait and see" was wrong, the advice should be "Go and look," and at once. The public was also to blame for the great increase in the severity of cancer because of incredulity as to the results of operations. Patients who had been cured refused to advertise their cures, because of a false notion that cancer was a sort of moral blemish. The public ought to know that in operating the surgeon had gone as far as it was physically possible for him to go. His operations could not be more extensive, it was hardly possible for them to be safer or to have more successful end-results. The reason why equal success did not attend every case was that nearly everything depended on early treatment. Cancer was always primarily a local disease. If it was accessible when local, it was definitely curable. Certain cases were still inaccessible, but even cancer that could not be removed from the brain was now accessible to radium treatment.

Cancer rarely attacked a healthy organ. Such things as chronic irritation, inflammations, lumps and sores on the tongue and lip were not cancerous to begin with but they led to cancer. Cancer was not hereditary, infectious or contagious. Its worst feature was that at first it was almost always painless. He wished it were painful so that people would be driven to the physician. The accessible cancer was curable on one day but not on the next. Hence the overwhelming importance of early diagnosis.

#### Death of Carey F. Coombs

Dr Carey F. Coombs, associate editor of the *Medical Annual* and physician to the Bristol Royal Infirmary with charge of the university center for cardiac research, has died at the age of 53 from coronary thrombosis. It is an example of the irony of fate that this eminent cardiologist should have had his career cut short by the disease on which he had done so much work. An enthusiastic investigator and teacher, he was well known for his writings on heart disease. At the time of his sudden illness he was in the middle of a series of lectures on cardiovascular disease from a clinical standpoint which he was contributing to the *Clinical Journal* and intended to publish subsequently in book form. Three days before his death when he seemed to be recovering from the heart attack which proved fatal he joined in a symposium in the *British Medical Journal* on varicella in old age bringing forward a case at the age of 93. Educated at St. Mary's Hospital, London, he graduated with honors in London University in

1901 He settled in Bristol, where he held in succession the posts of registrar of the Children's Hospital, curator of the museum at the General Hospital University, demonstrator of pathology, and assistant and full physician to the General Hospital. He was best known for his writings on the various forms of carditis, which were the result of prolonged and careful observation, both pathologic and clinical, and shed new light on the subject.

## PARIS

(From Our Regular Correspondent)

Nov 30, 1932

### Physicians Who Inoculated Their Children with the B C G Vaccine

In France, at present, one child out of five is inoculated during the first week of life with B C G vaccine, and no untoward results have as yet been reported. The average number of vaccinations given each month is 10,700. Outside of France, more than a half million children have been vaccinated. As Mr Calmette has previously announced, the immunity conferred by the B C G vaccine against tuberculosis has proved valuable, in addition, for other infectious diseases to which the child is exposed: pertussis, measles, bronchopneumonia and enteritis. The general mortality, which includes all traumatisms as well as diseases, is only 4.6 per cent, as against 25 per cent in the nonvaccinated, during the first year. Of 579 children who have been vaccinated during the period of more than four years and who have remained in a contagious familial environment, not one has died. To obtain more precise statistics, Mr Calmette instituted an inquiry by sending out a detailed questionnaire to 280 physicians residing in eighty different departments of France, who had requested the B C G vaccine to vaccinate their own children. In this way, one could be certain that the vaccinated children had been followed up with special attention each day. The total number vaccinated was 514 and their ages today range between 1 and 9. Of these 514 children, 60 have lived in a known contaminated environment, 43 in a suspected environment, 140 have received two revaccinations, generally at age 1 and again at age 3. From 1924 to 1932, there were seven deaths in this group of 514 children, but only one from a tuberculous disease (tuberculous meningitis at age 3). The child had not been revaccinated, and he was in contact with a maidservant who was later recognized as tuberculous. The 507 survivors were, in 1932, in excellent health with the exception of four, who are at present puny and weakly, without assignable cause. These 280 physicians vaccinated, in addition to their own children, 7,017 other children of their clientele. Twenty-one physicians of this group vaccinate systematically all the children they bring into the world. In citing these statistics, Mr Calmette repeated that no experiment, if properly conducted, has furnished evidence that his B C G bacillus ever regains its virulence. In 400 necropsies on vaccinated children, as performed in various countries of the world, no tuberculous lesions have ever been discovered. The B C G bacillus has often been found in a living state in the glands, but no serial inoculations into animals sufficed to restore its virulence. The maintenance of allergy in the vaccinated children has been controlled by many physicians up to the age of 5. It is therefore perfectly safe to revaccinate at ages 1, 3, 5 and 7 such children as are especially menaced, that is to say, those who are the offspring of tuberculous parents or who are living in unfavorable surroundings. Nevertheless, Mr Calmette does not think that compulsory vaccination with the B C G bacillus should be introduced as yet. Many children die of dystrophies having an unknown cause. Although the use of the B C G vaccine does not enter into the case, it is to be feared that public opinion would without justification hold it responsible for these deaths and that a prejudice would develop against the B C G bacillus, as has happened in England and America with respect to small-

pox vaccination, which has served to perpetuate smallpox in those two countries, from which it should have been eradicated long ago.

### A New Type of Artificial Irradiation

The use of "artificial beaches" for the irradiation of young children, and especially rachitic children, by ultraviolet rays is becoming widespread. This treatment requires of course general medical supervision, and the children have heretofore been obliged to wear spectacles with special lenses to counteract the harmful effects of the ultraviolet rays on the eyes. However, Blancani and J. Walter have recently exhibited to the Societe d'electro-radiologie a new apparatus that permits the exposure of children to arc lamps without any harmful effects on the eyes and hence dispenses with the wearing of special spectacles by the children and by the hospital personnel. The lamps are directed toward the ceiling, whence the rays are reflected by metal reflectors formed of plates of stainless steel, each consisting of a large number of small hemispherical surfaces by which the dispersion of the reflected rays in all directions is brought about. Shades attached to the reflectors prevent direct irradiation downward below a horizontal line. On looking at the ceiling, one sees only countless brilliant points spread over several square meters of surface, so that, in spite of the intensity of the light, there are no dazzling effects. An accommodation or adaptation anteroom is first entered before passing into the so-called artificial beach, and another room follows that has no direct illumination but a zone of shadow that contains, however, by diffusion an appreciable proportion of ultraviolet rays. On the other hand, with carbon lamps of the new type, the authors secure a bluish light that furnishes a solar illumination of 5,000 units, which corresponds to that of the sun in the spring and the fall. Children are allowed to remain in the "artificial beach" for prolonged periods without direct medical supervision, and are allowed the privilege of playing games just as if in the open air.

### Fee Stubs for the Income Tax Collector

Like many other countries at present, France is struggling with a deficit in its annual budget, which compels the government to retrench and also seek means for increased revenue. Instead of attacking the evident causes of the deficit, which are the many forms of demagogic legislation passed in the last four years (the social insurance system, the pensioning of ex-service men, increases in the salaries of civil service workers, and pensions of all sorts), the government is seeking to increase its revenues by the imposition of new taxes. The minister of finance has announced that he plans to institute a thorough inquiry into the incomes of the liberal professions, which, according to him, inaccurately declare their income. The fact is that the liberal professions are not in as good a position to defend their rights as are the workmen, the peasants and the civil service employees, all of whom are members of some loud-spoken and menacing syndicate. The liberal professions, with rare exceptions, are in a difficult situation. The minister of finance appears to have physicians particularly in mind, for, he states, the national treasury does not have adequate control over the sums that physicians receive from patients. He suggests, therefore, that no medical prescription be acceptable unless written on blanks with corresponding stubs on which the charge for each call should be stated, and the stubs should be presented each year to the income tax collector. The minister contemplates applying similar measures to the lawyers. The Confederation des syndicats medicaux immediately presented a sharp protest against such a suggestion, pointing out that such blanks and stubs would constitute a violation of the right of privileged communication. Furthermore, it is well known that physicians make many calls for which they receive absolutely no fee. Verification of the fees recorded in the stubs by inquiring of the patients themselves, would be an insurmountable



ble difficulty. The declaration of a strike by the medical profession, directed against the social insurance system, has been proposed as a means of defense in the event that the contemplated legislation is enacted.

## BUENOS AIRES

(From Our Regular Correspondent)

Nov 1, 1932

### Two Full Time Professors Resign

The board of directors of the School of Medicine of Rosario recently resigned because the directors have had some difficulties with the students. The new board of directors has expressed a wish to nullify many of the regulations made by the previous boards for the management of the school. The School of Medicine of Rosario is dependent on the University of Litoral. The university controls seven medical schools and also other scientific centers. One of those centers, the Escuela de Agronomía y Veterinaria of the province of Corrientes, has more teachers than students. As a result of the economic conditions, the government recently reduced the yearly allowance of the University of Litoral, which in turn reduced the allowances given to the medical schools and scientific centers under its control. The medical school of Rosario could have met this deficit by reducing some of its expenses. There are, for instance, three courses on the same subject (psychiatry), many other subjects which are not strictly of a university nature could have been discontinued. However, in order to economize, the salaries of the professors were reduced. Drs. Ruiz and Hug, directors of the institutes of anatomy and of pharmacology of the medical school of Rosario, whose contracts expired, refused to sign a new contract at a reduced salary. Then the board of directors decided to eliminate the course of pharmacology. However, the students and some professors opposed dropping the course and finally they decided to continue it. The vacancies left by Drs. Ruiz and Hug were reported so that applications for the positions could be made. The monthly salary to be given professors in those positions is 500 pesos (\$130) as directors of the institution and 300 pesos (\$78) as professors, making a total of 800 pesos (\$280) a month. However, this amount is more theoretical than real, because, owing to taxes, the salary is reduced to 700 pesos (\$182). The full time professors of the medical school of Rosario had 1,300 and 1,500 pesos (\$338 and \$390), respectively, for their monthly salaries. By giving them only 700 pesos the school saves 1,500 pesos a month, although the full time system is sacrificed. Those full time professors have devoted the past ten or fifteen years to laboratory research and now they are compelled to practice medicine or do other things for a living, while their places are taken by others who have not had so much experience. There were five full time professors in the medical schools of Argentina. By the elimination of these two there are now only three (Drs. Housay, Lewis and Elizalde).

### New Regulations for the Practice of Medicine

The national department of public health has presented a proposed law to the Secretary of National Affairs for the regulation of the practice of medicine. The project will be presented to the house of representatives. The following regulations are proposed that the only persons authorized to practice medicine or any of its branches are those who have a national diploma or a foreign diploma duly legalized. Foreign physicians with a legal diploma may be authorized to practice in places where there are no legal national physicians, when they have a diploma given in a foreign school, not as yet recognized in Argentina. In this case however, if a legal national physician comes to that place the right to practice belongs to the national and not to the foreign physician. Foreign physicians who want their diplomas legalized should take

an examination of all subjects studied during the entire course of medicine, and then they must pay 4,000 pesos (about \$1,040) for their licenses. The law would apply to the practice of medicine, dentistry and obstetrics and to roentgenologists, hypnotists and other psychotherapists. Any advertising by physicians and any other persons practicing has to be authorized by the national department of public health. It is considered illegal to specify the time it may require for any cure, to say that any cure is infallible, to use secret or mysterious remedies, and to publish false or inexact statistics compiled from methods used. No physician is allowed to practice pharmacy and medicine simultaneously. Physicians, dentists or veterinary physicians who in any way are engaged in the preparation or sale of specifics, either as owners or as stockholders, are not allowed to practice their professions. However, physicians are authorized to enter into association with capitalists to establish sanatoriums as long as the capitalist does not interfere in any clinical or technical work of the sanatorium. The sharing of fees by physicians, as well as the remuneration given to them from drug stores, opticians and orthopedists, and any other conventional arrangement for the mutual benefit of the physician with some other person or institution, are forbidden. The law considers it advisable that nurses, masseurs, dental mechanics, clinical laboratories, sanatoriums, maternity hospitals, medical and physical therapy clinics and eye clinics, should be under special regulations. This bill has been presented to congress for consideration. The laws that now govern the practice of medicine were made long ago and do not deal with certain problems of modern practice.

### University Budget Reduced

The national government recently informed the board of directors of the University of Buenos Aires that two million pesos (\$520,000) will be deducted from the allowance for the support of the university. With this reduction, the resources of the university, which had been already reduced two million pesos, will amount to six millions pesos (\$1,560,000). Many protests have been presented to the government to effect a reconsideration. If this reduction becomes effective, the University of Buenos Aires will have a smaller budget than that of some other provinces in the country. The protests emphasize that the University of Buenos Aires supports a hospital, a college, a school of commerce, and research institutions. It has been suggested that it would be preferable to close the University of Litoral, the upkeep of which is expensive. This school has no university spirit. It has also been suggested that the medical school of La Plata be closed.

## VIENNA

(From Our Regular Correspondent)

Nov 20, 1932

### Prevention of Embolism

Professor Heyrovsky discussed recently, during a continuation course for general practitioners, a problem that has come to the forefront in recent years as to why, not only following operations but also in connection with internal disorders, embolism has increased to such a marked extent in all countries. Embolism is most commonly associated with diseases of the circulatory organs. In surgical cases it commonly develops after operation on the organs below the diaphragm. Women are affected from two to three times more frequently than men, while juveniles are commonly spared. Eighty-four per cent of the cases are in patients whose ages range from 40 to 70, and the statistics appearing since 1911 show a fourfold increase. Pavir has found that 13 per cent of all deaths in clinics are traceable to embolism. Of 432,000 patients operated on, 0.235 per cent became victims of embolism. The highest mortality from embolism occurs in prostatectomy. The causes of the increase of thrombo-embolism remain still unclarified. The



thrombi originate, for the most part, in the veins of the lower extremities or of the pelvis. Fatal embolism usually results from long cylindric thrombi originating in the veins of the thigh. Death usually occurs unexpectedly, frequently in patients who are considered convalescent, the symptoms of thrombosis being either entirely absent or slight, because the dangerous thrombi are attached to the wall of the vein by one end, while the rest of the thrombus floats and is easily torn loose to lodge somewhere as an embolus. Thrombosis with edema is not so dangerous, because then the thrombi are attached to the wall of the vein for a considerable area and are not torn loose. Also in thrombophlebitis of the saphenous vein, "moderate" embolism is much less frequent than the tearing loose of small blood clots, which cause the much less dangerous lung infarcts. For the formation of thrombi many are inclined to incriminate changes in the composition of the blood, disturbances of the circulation, and likewise injury of the intima of the veins in cases coming to operation, furthermore, in many persons there exists an inferiority of the veins of the lower extremities, possibly of hereditary origin. The prophylaxis must be based on mechanical, chemical and biologic factors. In persons with varices, who may possibly have had also phlebitis, it is advisable, before larger operations, to ligate the saphenous vein and to remove varices. During the operation the extremities should rest on a soft underlay and be held in place without much restraint. The heart and the circulatory organs must be carefully watched. After the operation the circulation of the veins of the legs and the pelvis should be mechanically stimulated by respiratory gymnastics, leg exercises, raising the foot of the bed, and possibly light massage. Venous stasis may thus be effectively combated. If, however, in spite of all efforts, a thrombus has formed, everything must be done to prevent it from becoming detached. The indications are then rest for the legs and raising of the head of the bed. Pains in the calf of the leg, in the pelvis and in the gluteal region are the first signs of a developing thrombosis, which usually presents the type of an ascending disorder and must be regarded as dangerous, whereas "descending thrombosis," which forms in the femoral vein, usually leads only to a disturbance of circulation. In any event, pains in the region of the pelvic veins (possibly due to hemorrhoids), combined with elevation of temperature and a high pulse rate, without assignable cause, are highly suggestive. Many authors are of the opinion that the administration of thyroïdin or thyroxine as a prophylaxis against thrombosis is useful, but of course improvement of the heart action, and compensation of the water loss by hypodermoclysis or intravenous infusion, must not be neglected. Good results were secured also, following the appearance of small emboli, which usually precede the fatal embolism by ligating the large veins (femoralis, iliaca, hypogastrica) in the healthy tissues.

#### Variations in the Onset of Puberty

In an address before the Wiener Medizinisches Doktoren-Collegium, Prof. R. Neurath discussed the problem of sexual maturation in man. The average time of such maturation for the population of the temperate zones ranges, in the Caucasian races, between the ages 13 and 15 for girls, and in boys the onset is usually from one to two years later, but slight fluctuations in one direction or the other are not infrequent. These fluctuations are influenced to a great extent by social and national, and often also economic, conditions. In the countries of the North (Scandinavia, for example), one often observes retardations up to the eighteenth and twentieth year in girls, while in Italy and Greece early onsets of puberty (ages 10 to 12) are noted. If, in a given region, the onset of puberty occurs at an age that belongs to childhood, one speaks of *pubertas praecox*. *Pubertas tarda* has aroused less interest. In the literature, about 400 cases of *pubertas praecox* in girls and about 100 cases in boys are recorded, about 15 per cent of which came to necropsy, which revealed important pathogenic

characters. It may be said that sexual precocity is only the most prominent expression of the fairly uniform acceleration of development affecting the whole organism (hyperrevolution). In both sexes a predevelopment of the whole organism and of the secondary sexual characters may usually be observed, although often such predevelopment is only partial. The external, and usually also the internal, reproductive organs resemble in form and size those of adults, and the larva, hair growth and skeletal structure are developed far beyond the true age. The sexual functions are sometimes fully developed (menstruation) but are also sometimes defective. As regards the future life history of persons with *pubertas praecox*, the prognosis varies, depending on the anatomic basis of the condition. Such persons are at first well developed for their age, but their growth is soon checked (early closure of the bone sutures), so that their final height is below that of persons who mature normally. Professor Neurath proposed the following systematic division of *pubertas praecox*: (1) primary, constitutional precocity, (2) the precocity of endocrine origin associated with tumors of the sexual glands, then of the suprarenal glands, then of the pineal body, and then of other endocrine organs, and (3) cerebral precocity associated with cerebral disorders. Primary, constitutional precocity begins in early childhood, and often even in the fetus, and shows a rapid uniform general development of the body, with several years of childhood dropped out, as it were. This type offers a good prognosis as regards length of life and shows no anatomico-pathologic basis. Tumors of the sexual glands (hypergenital puberty) produce, for varying intervals after birth, a rapid development of the body and early functioning of the gonads, with isosexual and heterosexual characteristics. If the tumor is removed, one often observes retrogression of the puberty symptoms. "Interrenal" precocity, associated with tumors of the suprarenal cortex, affects almost exclusively female children, one notes the virile hair growth, absence of the mammae, and the male type of musculature. Here, too, there have been examples of retrogression of the symptoms (reversibility) after a successful operation. *Pubertas praecox* of pineal origin attacks, on the other hand, almost exclusively boys. One observes rapid development of the body and of the secondary sexual characters, often also premature intelligence. Cerebral precocity is associated with various disorders of the brain and with tumors, abscesses and tuberculous sclerosis, and may follow epidemic encephalitis. In *pubertas tarda* the outward manifestations are characters of childhood persisting a long time and retardation or blocking in the appearance of the sexual characters. The condition is much more frequent and more marked in boys. In this condition the hypogenital disturbance of development (eunuchoidism) plays the chief part. In this condition are found both the lanky type and the stocky type, which become especially distinct precisely at the time of puberty. During the discussion that followed, it was brought out that about 25 per cent of all the cases of hermaphroditism, observed in recent years, concerned bearers of tumors, blastomas on the germinal glands being especially frequent, with which *pubertas praecox* was often associated.

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## Marriages

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WILLIAM H. JOINER, Greenup, Ky., to Mrs. Clista Mullins of Orlando, Nov. 24, 1932

RALPH S. SAPPENFIELD, Indianapolis, to Miss Zella Timmons in Pendleton, Oct. 26, 1932

MELROSE EDMUND WEED to Mrs. Mary Stevenson Mitchell, both of Philadelphia, Sept. 10, 1932

LOUIS F. KOMPARE Waukegan, Ill., to Miss Mary Shifrer of Chicago, Nov. 24, 1932

HUBERT SHATTUCK HOWE to Mrs. Estelle Hall Silo, both of New York, Dec. 26, 1932

## Deaths

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NUMBER 2

Henry Daspit ⊕ New Orleans, Tulane University of Louisiana School of Medicine, New Orleans, 1907, professor of neurology and psychiatry at his alma mater and dean and professor of psychiatry, Graduate School of Medicine, Tulane University of Louisiana, fellow of the American College of Physicians, medical director and superintendent of the City Hospital for Mental Diseases, chief of staff of neuropsychiatry, Charity Hospital, aged 48, died, Dec 19, 1932, of influenza and pneumonia

Timothy E Wilcox ⊕ Brigadier General, U S Army, retired Washington, D C, Albany (N Y) Medical College, 1864, veteran of the Civil and Spanish-American wars, entered the regular army as an assistant surgeon in 1867 and retired as a brigadier general by operation of law in 1904 aged 92 died, Dec 10, 1932, of arteriosclerosis and cerebral hemorrhage.

Preston C Coleman, Colorado, Texas, University of Louisville (Ky) School of Medicine, 1874, member and past president of the State Medical Association of Texas, councilor of the Second District Medical Society, fellow of the American College of Surgeons, for many years president and member of the school board, aged 79, died, Oct 29, 1932

Redding Hamilton Pate, Unadilla, Ga, University of Maryland School of Medicine, Baltimore, 1898, past president of the Dooly County Medical Society veteran of the Spanish-American War, mayor of Unadilla, formerly chairman of the county board of education aged 60, died, Nov 25, 1932, in Macon, of lobar pneumonia

Robert Adrian Marcy, Litchfield, Conn, New York University Medical College, 1882, member of the Connecticut State Medical Society, member of the school board, aged 72, on the staff of the Charlotte Hungerford Hospital Torrington, where he died, Dec 6, 1932, of pneumonia, following an operation for gallstones

Francis Marion Mason ⊕ Danville, Ill, Northwestern University Medical School, Chicago, 1894, fellow of the American College of Surgeons, on the staffs of the Lakeview and St Elizabeth's hospitals aged 66, died, Dec 24, 1932, in the Passavant Memorial Hospital, Chicago, of carcinoma of the pancreas

Christian Frederick Grimmer ⊕ Pekin Ill, University of Michigan Medical School Ann Arbor 1901 past president and secretary of the Tazewell County Medical Society, on the staff of the Pekin Public Hospital, aged 61, died, Dec 9, 1932, of pneumonia

Arthur S Rogers, Saginaw, Mich, University of Michigan Medical School, Ann Arbor, 1890, member of the American Academy of Ophthalmology and Oto-Laryngology aged 70 died, Dec 4, 1932, of injuries received in an automobile accident

John Henry Spencer ⊕ Jacksonville, Ill, American Medical College, St Louis 1892 county health officer, formerly county coroner veteran of the Spanish-American and World wars, aged 65, died suddenly, Dec 5, 1932, of heart disease

Francis Glenn Smith, Hamilton Ohio Ohio-Miami Medical College of the University of Cincinnati, 1910 member of the Ohio State Medical Association aged 47, died, Nov 17, 1932 in the Mercy Hospital, of perforating duodenal ulcer

Albert C Kniskern, Pomona Calif University of Vermont College of Medicine Burlington, 1879 aged 83 died Nov 22 1932, in the Nathan Littauer Hospital Gloversville, N Y of arteriosclerosis and cardiorenal vascular disease

William Sellars, Spokane Wash Detroit College of Medicine 1895 member of the Washington State Medical Association aged 59 on the staff of the Deaconess Hospital, where he died Nov 26, 1932 of cerebral hemorrhage

Jesse Monroe Cobb, Grove Hill, Ala Tulane University of Louisiana Medical Department, New Orleans 1893 member of the Medical Association of the State of Alabama, aged 61 died Dec 4 1932 of carcinoma of the throat

Carl David Nelson Persim Iowa University of Nebraska College of Medicine Omaha 1909 formerly president of the school board aged 53 died Nov 14 1932 in the Lord Lister Hospital Omaha Neb of a skull fracture

Chauncey S Kenney ⊕ Newton Kan, Detroit College of Medicine 1902 for many years superintendent of the State Sanatorium for Tuberculosis Norton aged 55 died Dec 1 1932 in a local hospital of heart disease

William Thomas Seabury, Baltimore, Atlantic Medical College Baltimore 1905 member of the Medical and

Chirurgical Faculty of Maryland, aged 53, died, Dec 2, 1932, of heart disease and chronic nephritis

John Baptiste Corbett, Providence, R I, Dartmouth Medical School, Hanover, N H, 1897, New York University Medical College, 1897, aged 67, died, Dec 5, 1932, of influenza and phlebitis with thrombosis

George A Richards, New Canaan, Conn, College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1886, aged 68, died, Nov 2, 1932, of diabetes mellitus

George A Sloss, De Witt, Neb, Michigan College of Medicine and Surgery, Detroit, 1899, aged 59, died, Nov 25, 1932, in a hospital at Beatrice, following an operation for appendicitis

Walter Peters, Cleveland, University and Bellevue Hospital Medical College, 1905, on the staff of the Glenville Hospital, aged 59, died, Dec 10, 1932, of uremia and chronic interstitial nephritis

William H Klayer, Norwood, Ohio, Miami Medical College, Cincinnati, 1897, also a lawyer and a pharmacist, aged 62, was found dead, Nov 25, 1932, of a self-inflicted bullet wound

William Charles Ray Graham, Brasher Falls, N Y McGill University Faculty of Medicine, Montreal, Que., Canada, 1892, aged 64, died, Nov 26, 1932 of cerebral hemorrhage

John McCallum McInnis, Brooklyn, Miss, University of the South Medical Department, Sewanee, Tenn, 1898, aged 64, died, Nov 22, 1932, of cerebral hemorrhage

John Winfield Monsted, New London, Wis, Detroit College of Medicine, 1894, member of the board of education, aged 62, died, Nov 29, 1932, of pneumonia

John Morris Kane, San Francisco, Cooper Medical College, San Francisco, 1893, aged 62, died, Nov 20, 1932, of coronary artery occlusion and chronic duodenal ulcer

Harry Jesse Gilbert ⊕ Newark, N J, University of Maryland School of Medicine, Baltimore, 1915, aged 48, died, Dec 6, 1932, of cellulitis and pulmonary infarct.

William Augustus Pratt, New York, Bennett College of Eclectic Medicine and Surgery, Chicago, 1895, aged 60, died suddenly, Nov 25, 1932, of heart disease

Samuel A Smith ⊕ Carbon, Ind, Illinois Medical College, Chicago, 1904, aged 64, died, Dec 10, 1932, in the Clay County Hospital, Brazil, of cerebral hemorrhage

John Mann, Norfolk, Va, Medical College of Virginia, Richmond, 1894, aged 61, died, Oct 31, 1932, of cardiac vascular sclerosis and cerebral hemorrhage

Eliza Ellen Maples Morris, East Bernstadt, Ky, Woman's Medical College of Cincinnati, 1894, aged 70, died, Nov 27, 1932, of cerebral hemorrhage

Albert Sidney Riddle, Stillwater, Okla, Georgia College of Eclectic Medicine and Surgery, Atlanta, 1889, aged 70, died, Nov 29, 1932, of heart disease

John Owen Kirkpatrick, Nashville, Tenn, University of Louisville (Ky) School of Medicine, 1870, aged 85, died, Nov 23, 1932, of arteriosclerosis

Charles C Ransom, Potomac Ill, Hahnemann Medical College and Hospital Chicago, 1890, aged 72, died, Nov 24, 1932, of gastro-enteritis

Arthur Le Roy Blunt, Chicago, Bennett College of Eclectic Medicine and Surgery, Chicago, 1888, aged 76, died, Nov 7, 1932, of myocarditis

Frank William McNamara, Cincinnati Cincinnati College of Medicine and Surgery, 1901, aged 53, died, Dec 6, 1932, of cerebral hemorrhage

Daniel William White ⊕ Tulsa, Okla Jefferson Medical College of Philadelphia, 1906, aged 51, died, Oct 31, 1932, in a local hospital

S J Ross, Schultz, W Va (licensed, West Virginia 1897), aged 80 died, Nov 9, 1932, of cerebral hemorrhage and arteriosclerosis

William A. Graham, Hayesville, N C (licensed, North Carolina 1889), aged 77, died, Nov 26, 1932, of cerebral hemorrhage

Hanson Julius Kofoed, Chicago, Jenner Medical College, Chicago 1913, aged 62, died Nov 26, 1932, of chronic myocarditis

Lester Cameron Smith, Omro Wis, Rush Medical College Chicago, 1883, aged 73, died, Nov 26, 1932, of chronic nephritis

Clement Edwin Reed, Detroit, Detroit College of Medicine 1913, aged 55, died Nov 21 1932 of septicemia

## Correspondence

### DEATHS OF M ALLEN STARR AND JOSEPH FRANCIS BABINSKI

*To the Editor*—Neurologic science has lost two outstanding figures this past fall—one in the death of M Allen Starr of New York, at the age of 78, and the other of Joseph Francis Babinski of Paris, at the age of 75. They were contemporaries and occupied in their respective countries analogous positions of eminence and renown. Dr Starr, it is true, had ceased to be neurologically active now for some years, as he became professor emeritus in 1915, but Babinski kept up his clinical work until comparatively recent years, when an advancing parkinsonism made it uncomfortable to go on.

Starr and Babinski had something in common in their masterly skill at case presentation. They were both marvelous teachers. Babinski was the greater neurologist. This constitutes no derogation of Starr, since one might state Babinski was in a class all by himself, not only as brilliant a teacher as was Starr, but a brilliant clinical observer of new material and a ceaseless investigator and producer. Had Starr been a poor man it is not unlikely that he would have risen to as great heights as his Paris confrere.

It has been my privilege to work with both of these masters in neurology. Starr was very helpful to my father, who was trying to develop, as a pedagogue, the now fairly well acknowledged idea that in teaching children "there was a tide in the affairs of men," and that maturity in anatomic patterns was essential before there could be development in behavior patterns. He was always helpful to me in my fifteen years' work at the Vanderbilt Clinic. He could not, however, quite forgive me my freudian inclinations.

I first met Babinski when in 1891, as a greenhorn, I was in Paris and attended some of Charcot's clinics. I was hardly aware at that time—so backward were the medical schools in the nineties of historical medicine—of his eminence. I can dimly recall but one of these early dramatic lectures of Charcot, who in 1891 was just beginning to suffer from the illness that caused his death a few years later, in 1893.

Babinski was assistant in the Salpêtrière clinic at this date, but I have no distinct recollection of him at this time or of Janet, who had just about then come from Havre, where he had been teaching philosophy, to take up his studies for a medical degree, which was awarded him in 1893. I mention this detail since some writers have tried to make out that Janet was an assistant of Charcot's when Freud was there in 1885, six years previously.

On a later visit to Europe, in 1906, I was much impressed by Babinski's great personality as a teacher but I attended only a few of his demonstrations in the old Pitie. In 1909, however, I spent six months in Paris, with a few weeks out to go to Lourdes, and attended his weekly conferences with great interest. Here his patients, male and female, came before the students completely stripped. Thus he could demonstrate without hindrance the various reflex activities which he has made so familiar in various disorders of the peripheral and central nervous system. He invariably tested out the labyrinthine functions electrically. I was never quite convinced that his formula for pithiatism was completely valid and that a separate group to which this term could be applied was separable from the conversion hysterics, although at that time, 1909, my intimate touch with the freudian formulations was only beginning. Here in Paris I was listening to Janet and his conceptions, was daily making rounds with Dejerine and hearing his ideas, and then listened to Babinski. None of the formula seemed to get at the dynamics of the situations. Babinski's ideas of suggestion and persuasion were too stereotyped and simple. Dejerine's big hearted confidence and bon-

homie with his neurotic patients and his entering into the details of their emotional life came nearer to Breur and Freud's catharsis. Janet's meticulous and detailed case history taking, which now as I look back on it was evidently of much value, was boring, though in his expositions Janet was brilliant and inspiring. His work seemed more fitted for literature at that time, and even now there seems too much irrelevant elaboration with little inner connection.

While it was true that Babinski could persuade a pithiatric anesthesia to disappear, much as I had witnessed it to disappear under the brutal electric spark treatment which was orthodox in English and some German clinics, yet the conversion mechanism found some other organ of the body to carry the conflict. These patients were never cured. The content remained the same even if the form varied. It was only when an explanatory analysis in terms of the affective adjustments was carried out that the patients were really "cured."

I saw Babinski but once after the war. He was then in his new Pitie clinic. At my last visit in 1929 he was not there. He was ill and his assistant for many years Jarkowski, gave his clinic. SMITH ELY JELLIFFE, M.D., New York.

### MORBIDITY IN TUBERCULOSIS

*To the Editor*—I was interested and somewhat concerned on reading the communication entitled "Statistics of Morbidity in Tuberculosis," by Dr J A Myers of Minneapolis (THE JOURNAL, Dec 10, 1932, p 2050). Dr Myers brought up a big problem in public health related to immunity in tuberculosis, over which many physicians may well ponder. The answer seems to lie at the root of all our tuberculosis work.

I agree with Dr Myers that there does occur a form of immunity in tuberculosis, but I am convinced that it is only transient and relative. If one should receive large and frequent doses of tubercle bacilli, there is little chance of escaping clinical tuberculosis, regardless of whether there has been a previous primary infection or not.

Some writers classify calcified tuberculous lesions in children as actual disease. I maintain that calcified lesions, without any other evidence of the disease, present a good example of relative immunity, similar to the positive reaction to the Mantoux test. Dr Myers might be interested to know that during the past five years over 9,000 tuberculin tests (90 per cent Mantoux) have been given to children under 15 years of age in the county department of health at Los Angeles. The average age is about 10 years. At the present time, in unselected cases, these tests are running 16 per cent positive, while in the beginning they were almost twice that high.

Dr Myers is apparently apprehensive of the time when there will be too few tubercle bacilli to go round. Should this ever occur, would there be a catastrophe? I think not. For example, all agree that things are much better than they were half a century ago, the incidence of tuberculosis being greatly reduced. Well, then, there is only one way of judging the future, and that is by the past, and the past has spoken.

To look at this from another angle, the contacts to the few tuberculous patients remaining would be no worse off than they are at present, as all people must have the first time to be infected. Furthermore, there is no definite proof that the time of this initial or primary infection, if extended to adult life, would be more dangerous than it is in children. The contrary seems to be true. It has been said that a person is most unfortunate who has never had a tuberculous infection. I prefer to be one of the unfortunates.

I think that the present system of attacking the problem of tuberculosis is sound, namely, getting rid of the source of infection, as has been done in typhoid and other diseases.

MERL LEE PINDELL, M.D., Los Angeles  
Roentgenologist, Los Angeles County General  
Hospital Outpatient Department.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

### HEART SYMPTOMS FOLLOWING PREGNANCY

*To the Editor*—I have a patient aged 25 in whom following a normal pregnancy about three years ago a rapid heart developed. The blood count and the basal metabolism were normal. There were no physical observations to account for this condition. Eleven months ago she again became pregnant and after the first three months of pregnancy this condition left her and she felt fine. Her second baby is now 3 months old and symptoms of weakness and palpitation have returned. Her heart beats at a rate of 100 to 110 with no physical observations to account for it. Is it possible that the fetus supplies this patient with something that is otherwise lacking or is there some other possible explanation for the symptoms disappearing during pregnancy and then returning in a short time after confinement?

R E JERNSTROM MD Rapid City S D

*ANSWER*—In spite of the normal basal metabolism test, the cause of the rapid heart in this case is most likely a disturbance in the function of the thyroid gland. It is possible that during pregnancy the fetal thyroid assisted in the metabolism of the mother. A slight argument in favor of this is the fact that improvement did not take place until the beginning of the fourth month of gestation. Aside from this there is normally during pregnancy an increased activity of the thyroid gland and a distinct change in the body metabolism. It is more probable, however, that the changes that occur in the glands of internal secretion, particularly the thyroid, in the pregnant woman, account for the alteration in the pulse rate. The patient should have at least one more basal metabolism test to make certain of the thyroid function at the present time. Regardless of the result, which cannot be extreme, it would be worth while having the patient take iodine in some form or another, such as compound solution of iodine for a week or ten days to see what effect it has on the pulse. An improvement will probably be noted.

### CURETTEMENT UNDER LOCAL ANESTHESIA

*To the Editor*—In *THE JOURNAL*, Nov 26 1932 in answer to M D Texas on Menorrhagia you end by saying 'A curettement has not infrequently helped women like the one described' and this operation can readily be done under local anesthesia. Please send me as soon as possible the method of anesthetizing the uterus for curettement.

M D Nebraska

*ANSWER*—The surgical preparation of the vagina is, of course, the same as when inhalation anesthesia is employed. The patient should be given a hypodermic of  $\frac{1}{4}$  grain (16 mg) of morphine and  $\frac{1}{200}$  grain (0.3 mg) of scopolamine at least thirty minutes before the infiltration is to be begun. The narcosis due to morphine persists for a variable length of time after the operation is ended and this usually insures that the patient will sleep or at least be comfortable for some time after the operation.

The patient should be made as comfortable as possible during the operation. Hence abundant pillows should be placed on the operating table, especially under the back and around the shoulders where braces are usually applied. For the local anesthetic, 0.5 per cent of procaine hydrochloride is used. To this solution after sterilization, two drops of 1:1,000 epinephrine are added for each ounce. About 6 ounces of solution is prepared.

The technic for dilation and curettement is as follows. A narrow retractor is used to depress gently the posterior vaginal wall. If the patient has a narrow vagina or a rigid perineum, solution should also be injected into the perineum as follows. The needle is inserted about midway down one labium majus and solution is injected all along the edge of this labium then across the fourchette and up the edge of the other labium majus. It is usually necessary to remove and reinsert the needle a few times but one must always reinsert the needle in an area which has already been infiltrated. With Allis forceps slight traction is then made on the infiltrated fourchette and solution is injected into the layer between the vaginal wall and the rectum not only in the midline but also well out to the sides in the shape of a fan. The needle is inserted about 5 cm in each direction and about 30 cc. of solution is distributed in this space. In some cases it is necessary to insert the needle deeply through the fascia over each levator ani muscle and inject about 10 cc of solution into the muscles and fascial layer. Then the cervix is grasped with a tenaculum and gently

pulled down and to the right side. The needle, which should be long and flexible, is then inserted into the left parametrium by following closely along the cervix for a distance of about 2 to 3 cm. If any resistance at all is met, the needle has most likely penetrated the cervix. In this case it should be pulled back slightly and then inserted a little more laterally. After the needle is in the parametrium, the plunger should be pulled up slightly to make certain that the needle has not entered a blood vessel. If no blood appears in the barrel of the syringe, about 10 cc of solution is injected slowly and with the needle constantly but gradually being withdrawn. The same procedure is carried out on the right side of the cervix. The procaine hydrochloride in the parametria blocks the large sympathetic ganglions of Frankenhauser, which are situated at the upper portion of the cervix. The local anesthesia produces blanching of the vaginal mucosa around the cervix. If parts of the vaginal epithelium are not blanched, it is best to inject about 5 cc. of solution into the space between the cervix and the bladder and between the cervix and the rectum. It is a good plan to administer a hypodermic of pituitary extract when the operation is begun in order to insure a minimal loss of blood from the uterus.

After waiting about five minutes it will be found that the cervix is soft enough to permit easy dilation without pain. Curettement is likewise a painless procedure and there is little bleeding. The uterus retains its tonicity even if pituitary extract is not used. Occasionally the patient experiences slight pain when the corners of the uterus are curetted. One should not undertake to curet the uterus without a thorough knowledge of its anatomy or without an understanding of pathologic conditions that may be present.

### CONSTITUTIONAL TYPES OF CRIMINALS

*To the Editor*—I am rather interested in psychopathology and psychiatry as applied to criminology and other branches of sociological science. Perhaps there are no statistical data to furnish an answer to these questions but I thought it might be possible that some authority has expressed an opinion. Using the personality types suggested by Jung are professional criminals (such as gangsters) generally of the introvert or schizoid type of personality or are they usually extroverts? The plotting villains of fiction are almost invariably pictured as of the introverted type but at least one famous criminal of America is a pyknic. Please omit name.

M D Michigan.

*ANSWER*—There is, of course, no one type of criminal, and just as wide variations are to be found, both as to body and as to personality type, as among the population at large. Many studies of this problem have been and are being made. An example is to be found in Mohr and Gundlach Relations Between Physique and Performance in Criminals (*J Exper Psychol* 10 117 [April] 1927). In such studies it is usual to divide the criminals according to the type of crime of which they have been convicted. In brief, those convicted of crimes of fraud most often have tall, heavy frames of athletic-asthenic or pyknic type, in crimes of violence, the bodies of convicts are the largest and most robust of all, in crimes of the nature of burglary larceny and hold-up the offenders show fairly evenly distributed types of body build. Theoretically, one would expect that crimes of fraud would show a larger proportion of introvert personalities, whereas crimes of violence would reveal more extrovert characters. However, actual studies reveal no clear-cut distinctions as yet. This is not surprising when it is realized that the personality types like the body types, are far from being entities, every person is only more or less introvert and the problem is not a simple one of all or none.

### YELLOW CHROMIDROSIS

*To the Editor*—A health ordinance worker aged 46 eating a normal mixed diet and not taking drugs complains that his perspiration stains the underclothing bed linens and handkerchiefs (on mopping the face and forehead) a rich cream yellow. These stains were first noted approximately two years ago and have become more pronounced. Ordinary laundering does not completely remove the stain. Common routine studies of the urine and the blood are negative. The perspiration is acid in reaction to litmus. Black powder (Chilean saltpeter sulphur and charcoal) hydrochloric acid sal ammoniac vapor and acacia are encountered occupationally. Neither the members of the family nor fellow workmen are similarly affected. What is the nature of this anomaly? What chemicals if any are implicated? What further investigation and corrective measures are recommended?

J A WILLSAUGH MD Keyport Wash

*ANSWER*—True yellow chromidrosis is so rare as to constitute a medical curiosity rather than a disease.

No proof exists that any one of the industrial agents mentioned in the query may be the source of yellow perspiration. Ordinance workers manipulating trinitrophenol and similar organic explosives conceivably might secrete a yellow sweat, but this is not proved.

The best known publication dealing with yellow sweating is that of Heidingsfeld (*THE JOURNAL*, Dec 13, 1902, p 1519), who says

Chromidrosis is not as its name implies, an anomaly of sudoriferous secretion. Judging from the limited number of cases in the literature, and as a matter of common observation, it is an exceedingly rare affection as regards forms characterized by yellow and brown, and probably black blue, green and intermediate shades of discoloration. Red chromidrosis is an entirely different and by no means an infrequent type of affection, with an extraneous cause, probably some form of erythro micrococcus tetragenus infection from individual to individual, and yielding to anti parasitic remedies. In the light of this investigation the pigmented elimination, in the yellowish brown forms at least, is insoluble in water, alcohol ether, etc., is readily soluble in chloroform, stains linen indelibly, shows no reaction when treated with ordinary reagents and is amorphous, homogeneous and resinous in character. Pathological examination reveals the sudoriferous glands of the affected area to be normal sebaceous glands absent, a hyperkeratosis around the openings of hair follicles and pigment accumulations near the hair follicles, in the stratum corneum lower layers of the rete, and the adjacent cutis. The pigment is grouped in cell like masses, is not finely granular and does not bleach with hydrogen dioxide like chromophores. Spectroscopic examination of the eliminated pigment reveals no absorption bands and hence it is not a derivative of oxyhemoglobin. In view of the pathologic findings the absence of sebaceous glands the normal condition of the sudoriferous glands cases of so called chromidrosis (excluding red forms) are anomalies of pigmentation and not glandular secretion.

This author, in describing his case of yellow-brown chromidrosis, indicates many investigative procedures, some of which might be helpful in further inquiry into the present case.

#### DICK TEST FOR SCARLET FEVER

*To the Editor*—The Dick test is supposed to be read in twenty four hours, I believe. Recently I made the test on three nurses they were all negative in twenty four hours, but in two of the three marked reactions developed on the third day. The erythema was about 3 cm in diameter and was followed by desquamation. In the other nurse a reaction never developed exceeding 0.5 cm in diameter at any time. Should these delayed reactions be considered positive and indicate immunizing treatment? Does this mean that a single twenty four hour reading of the test is unreliable? Please omit name. M D, Montana

*ANSWER*—The Dick test should be read in twenty-four hours. A delayed reaction as described is suggestive of something wrong with the skin test solution or with the syringe or needle used. It is not to be taken as an indication for immunization but is to be taken as an indication for another skin test properly made.

#### CAUSTIC EFFECTS OF ETHYLHYDROCUPREINE (OPTOCHIN) UNLIKELY

*To the Editor*—Please advise me whether optochin (ethylhydrocupreine) of excessive strength, aqueous solution used in the eye would cause a burn of the cornea, resulting in a corneal scar. Please omit name.

M D, Georgia

*ANSWER*—Probably not. As far as can be found in a rather exhaustive search of the literature, there have been no caustic effects on the cornea ever recorded. It has been used in a concentration of 10 per cent experimentally without any untoward results, and 1 and 2 per cent solutions have been injected subconjunctivally without harmful effects. It has been given internally in solid form in pneumonia without any caustic effect on the mucosa of the stomach.

#### SODIUM CHLORIDE IN HYPERTENSION

*To the Editor*—A patient of mine has asked the following questions with reference to table salt. Is it the sodium or the chloride in table salt that does the harm to patients having high blood pressure? If the kidneys are normal will salt do any harm in high blood pressure?

LOUIS L. SHERMAN, M D, Oakland, Calif

*ANSWER*—It is problematic whether the moderate ingestion of sodium chloride does any harm to patients with hypertensive arterial disease without appreciable renal impairment. Excesses of salt, as excesses of any constituent of the diet, are unwise (Frusler, H M. Disturbances in Sodium Chloride Metabolism, *THE JOURNAL*, Aug 25 1928 p 538). There is a division of opinion as to the advisability of a rigid "salt free" regimen in the management of hypertensive disease, but the majority of clinicians who have thoroughly considered the problem are inclined to conclude that the moderate use of salt (as ordinarily used in cooking without additional salt at table) is noninjurious (Strouse, Solomon, and Kolman, S R. *Tr. A. Am. Phys.* 37 531, 1923. Stieglitz, E J. Arterial Hypertension New York Paul B Hoeber Inc 1930). If any injury does occur, it is probably more attributable to the sodium ion

than to the chloride ion. The use of potassium salts to replace sodium chloride has been suggested (Addison, W L T. *Canad. M. A. J.* 18 281 [March] 1928). In the absence of renal functional impairment the moderate ingestion of table salt will not harm the hypertensive patient.

#### INDICATIONS FOR PROSTATECTOMY

*To the Editor*—A man aged 62, with fibroid tuberculosis and generalized arteriosclerosis with an accompanying heart disease of the same type with severe auricular fibrillation, has hypertrophy of the prostate with 8 ounces of urinary retention. The urine is loaded with pus. Would any operation for the removal of the prostate be considered at all? What treatment would you advise? Please omit name and address.

M D, Tennessee

*ANSWER*—It would be difficult to state from this description whether a correction of the prostatic obstruction should be carried out, but in all probability a patient with 8 ounces of urinary retention, with infection, is certain to have his condition progress and add much to his other troubles. It might be reasonable to state that he should have some form of bladder drainage (indwelling catheter or suprapubic cystostomy under local anesthesia) and when the infection in the urinary tract has been cleared up, the obstruction corrected by transurethral electroresection.

#### DIETS IN BRONCHIAL ASTHMA

*To the Editor*—Will you kindly let me know where I can get information regarding diets in chronic bronchitis and bronchial asthma? I understand there is a Vaughan diet and one described by Rowe.

J W HOPKINS, M D Glendale Calif

*ANSWER*—The diets described in the following works are intended primarily for the treatment of cases of bronchial asthma. It is possible, of course, that these diets might also aid some patients with chronic bronchitis. The list is by no means complete, but it represents the efforts of the leading workers in this field.

Rowe A H. Food Allergy, *THE JOURNAL* Nov 24 1928 p 1623.  
Rowe A H. Food Allergy, Philadelphia Lea & Febiger 1922.  
Laroche Richet and Saint Girons. Alimentary Anaphylaxis translated by Mildred P. Rowe and Albert H. Rowe, University of California Press 1930.  
Vaughan W T. Allergic Migraine, *THE JOURNAL*, April 30, 1927 p 1383.  
Vaughan, W T. Allergy and Applied Immunology, St. Louis, C V Mosby Company, 1931.  
O'Keefe, E S, and Rackemann, F M. *THE JOURNAL*, March 16, 1929 p 883.  
Vallier Radot, Pasteur, and others. Nutrition, Paris, G. Doin & Cie, vol 1, No 2, 1931.

#### EPINEPHRINE OR EPHEDRINE IN CORONARY THROMBOSIS

*To the Editor*—I should like to be advised whether the use of epinephrine and ephedrine is contraindicated in a case of coronary thrombosis complicated by an occasional attack of severe asthma. The coronary thrombosis is of six years standing and this patient has had two or three coronary episodes during the past six years. During the last attack of asthma he went into fibrillation, necessitating the administration of digitalis. Would it be reasonably safe to administer epinephrine or ephedrine along with a narcotic during the asthmatic attack in view of the unquestionable coronary occlusion complications? Please omit name.

M D, West Virginia

*ANSWER*—The answer would depend somewhat on the age of the patient and on other evidences of cardiac disease, such as the size of the heart, the condition of the valves, the electrocardiogram and the blood pressure. With auricular fibrillation, if accompanied by dyspnea, digitalis would certainly be all right. It would be reasonably safe to use epinephrine and ephedrine and narcotics if other measures failed to relieve the severe asthmatic seizures.

#### INCREASED LIBIDO AFTER THE MENOPAUSE

*To the Editor*—I have read with interest your answer to the correspondent who relates a case of increased sexual libido after the menopause. The two reasons that you give for the occasional increase in the libido in women after the menopause are correct. But there is a third factor which you have failed to mention and that is the disappearance of the fear of pregnancy which follows the menopause. All know that on many women the fear of pregnancy acts as a terrifying specter. It hangs over their heads as a sword of Damocles and prevents them from normally enjoying the sex act. Many of them are laboring under the impression that if they restrain themselves if they do not let themselves go, the danger of pregnancy will be greatly lessened. Some even think that pregnancy is impossible if they do not participate and do not permit themselves to reach an orgasm. I have known many women who were considered frigid and who had never enjoyed the sex act until after their menopause.

WILLIAM J. ROBINSON, M D, New York



## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

ALASKA Juneau March 2 Sec Dr Harry C. DeVighe, Juneau  
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS Milwaukee,  
June 12 Sec Dr William H. Wilder 122 S Michigan Blvd Chicago  
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The written  
examination will be given in cities of the United States and Canada  
where there is a Diplomate who may be empowered to conduct the  
examination April 1 The general oral clinical and pathological exami-  
nation will be held in Milwaukee June 13 Sec., Dr Paul Titus,  
1015 Highland Bldg., Pittsburgh  
AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee, June 12 Sec  
Dr W P Wherry 1500 Medical Arts Bldg Omaha  
CALIFORNIA Los Angeles Feb 27 to March 2 Sec Dr Charles B  
Pinkham 420 State Office Bldg Sacramento  
CONNECTICUT Basic Science New Haven Feb 11 Prerequisite to  
license examination Address State Board of Healing Arts 1895 Yale  
Station New Haven  
NATIONAL BOARD OF MEDICAL EXAMINERS The examination will be  
held in centers where there are five or more candidates Feb 13 15  
Ex Sec. Mr Everett S Elwood 225 S 15th St Philadelphia  
NEVADA Reciprocity Carson City, Feb 6 Sec Dr Edward E  
Hamer Carson City  
NEW YORK Albany Buffalo New York, Syracuse Jan 30-Feb 2  
Chief Professional Examinations Bureau Mr Herbert J Hamilton  
Room 315 State Education Bldg Albany  
VERMONT Burlington, Feb 15 17 Sec Dr W Scott Nay Underhill  
WYOMING Cheyenne Feb 6 Sec. Dr W H Hassel Capitol Bldg  
Cheyenne.

### Idaho October Report

Hon. Emmitt Pfost, commissioner of law enforcement reports  
the oral and written examination held in Boise, October 4-5,  
1932 The examination covered 13 subjects and included 130  
questions An average of 75 per cent was required to pass  
Five candidates were examined all of whom passed Eleven  
physicians were licensed by endorsement The following col-  
leges were represented

College	PASSED	Year	Per
George Washington University School of Medicine	(1931)	Grad	Cent
State University of Iowa College of Medicine	(1931)	88	93
Columbia University College of Physicians and Surge	(1908)	87	
University of Oregon Medical School	(1931)	91	

College	LICENSED BY ENDORSEMENT	Year	Endorsement
College of Medical Evangelists	(1932)	N B M Ex.	
Stanford University School of Medicine	(1930)	California	
Georgetown University School of Medicine	(1931)	Penna	
General Medical College Chicago	(1923)	Illinois	
Loyola University School of Medicine	(1921)	S Dakota	
Northwestern University Medical School	(1931)	Penna.	
Rush Medical College	(1931)	California, Washington	
University of Minnesota Medical School	(1927)	Minnesota	
St Louis University School of Medicine	(1930)	Missouri	
University of Oregon Medical School	(1929)	N B M Ex	

### Connecticut July Report

Dr Thomas P Murdock secretary, Connecticut Medical  
Examining Board reports the written examination held in  
Hartford, July 12-13 1932 The examination covered 7 subjects  
and included 70 questions An average of 75 per cent was  
required to pass Thirty-two candidates were examined, 27  
of whom passed and 5 failed The following colleges were  
represented

College	PASSED	Year	Per
Yale University School of Medicine	(1928) 528 (1930) 78 (1932) 805	(1927)	80.1
Yonkers University School of Medicine	(1931)	76.3*	
Rush Medical College	(1932)	82.1	
Johns Hopkins University School of Medicine	(1930)	82.5	89.5
Boston University School of Medicine	(1932)	79.5	80.3
Harvard University Medical School	(1925)	81.1	
Tufts College Medical School	(1931) 764 78.3 79.1 80.2 81.9 83.4*	(1930)	78.1
University and Bellevue Hospital Medical College	(1932) 84.9	(1931)	83.4*
Jefferson Medical College of Philadelphia	(1931) 7	82.1*	
University of Pennsylvania School of Medicine	(1931)	84	
University of Pittsburgh School of Medicine	(1924)	77.7*	
University of Vermont College of Medicine	(1931)	79.7*	
University of Toronto Faculty of Medicine	(1925)	81.6	
McGill University Faculty of Medicine	(1921)	80.4	

College	PASSED	Year	Per
Harvard University School of Med	(1931) 70.1	Grad	Cent
George Washington University School of Medicine	(1930)	71.6	
University of Louisville School of Medicine	(1930)	70.5	
University of North	(1931)	66.2	

Thirty-one candidates were licensed by endorsement from  
July 30 to Oct 10, 1932 The following colleges were repre-  
sented

College	LICENSED BY ENDORSEMENT	Year	Endorsement
Yale University School of Medicine	(1929) 3 (1932) N B M Ex.	(1929)	New York,
Johns Hopkins University School of Medicine	(1929) 2 Maryland	(1901)	New York,
Harvard University Medical School	(1928) 2 (1929) 2 N B M Ex	(1930) 2	N B M Ex
Tufts College Medical School	(1929) Tennessee	(1930) 2	N B M Ex
Columbia University College of Phys and Surgs	(1929)	(1929)	New York
Long Island College Hospital	(1930)	(1930)	N B M Ex.
Syracuse University College of Medicine	(1922)	(1922)	New York
University and Bellevue Hospital Medical College	(1930)	(1930)	N B M Ex
University of Rochester School of Medicine	(1930)	(1930)	N B M Ex
University of Cincinnati College of Medicine	(1919)	(1919)	New York
Pennsylvania Department of Medicine	(1898)	(1898)	New York
Temple University School of Medicine	(1926)	(1926)	Penna.
University of Pittsburgh School of Medicine	(1927)	(1927)	Penna.
Woman's Medical College of Pennsylvania	(1925)	(1925)	Penna.
University of Vermont College of Medicine	(1931) 2	(1931) 2	N B M Ex
University of Toronto Faculty of Medicine	(1924)	(1924)	Minnesota
McGill University Faculty of Medicine	(1930)	(1930)	N B M Ex

\* The licenses of these applicants have not as yet been issued  
† Failed in both medicine and surgery

## Book Notices

**Tuberculous Disease in Children Its Pathology and Bacteriology** By  
John W S Blacklock Medical Research Council Special Report Series  
No 172 Paper Price 8s Pp 155 with illustrations London His  
Majesty's Stationery Office 1932

This is probably the best book on the subject in the English  
language It fills in the gaps left in the work of others As  
the author corroborates most of the fundamental pathologic  
and pathogenic features observed by his predecessors, and as  
the London correspondent (THE JOURNAL, Nov 12, 1932,  
p 1700) has reviewed many aspects of this work, only the  
important parts not sufficiently emphasized are here reviewed

The material was selected from 1800 consecutive necropsies  
at the Royal Hospital for Sick Children, Glasgow Of this  
number, 283 (157 per cent) were found positive for tubercu-  
losis Owing to the method of selection, many patients who  
were obviously tuberculous were sent to tuberculosis dispen-  
saries by private physicians, so the material is not a cross  
section of all the tuberculous material in the community In  
fact, most of the other reports, with the possible exception of  
Parrot's likewise have not included all the tuberculosis in the  
community Much of the most serious as well as the mildest  
infections are not included The disease had developed in  
many of the children as a result of a lowering of the tissue  
resistance by other diseases, thus permitting the latent foci or  
latent bacilli to become active This is mentioned because the  
tuberculin reactions, although coinciding well with the post-  
mortem observations, do not coincide with those of Bernard or  
Meyers in widely separated parts of the world Blacklock's  
figures on these hospital tuberculous patients reveal that only  
26 per cent of the children during the first two years of life  
died of other causes than tuberculosis, while Bernard's figures  
in Paris reveal that of infants reacting to tuberculosis under  
two years of age in a nursery of contact children, 74.9 per cent  
never presented any clinical disease. Meyer's figures are simi-  
lar It would be interesting to know the figures in Scottish  
infants in which similar studies were carried out. Although  
the size and number of doses of bacilli will certainly cause  
various types of lesions in different instances, it is doubtful  
whether this huge discrepancy can be accounted for on this  
basis One cannot escape the impression that the Scotch chil-  
dren appear to be more susceptible than many of the more  
industrialized races In fact most of the Celtic race with the  
northern Scandinavians seem to be half way between the indus-  
trialized races and the primitive, with regard to severity and  
tuberculous infection It would not seem to be so much the  
nature of racial quality, however, as lack of industrialization  
(and tuberculinization) generally The pastoral peoples always  
possess more of virgin soil

This is borne out further by the type of lesions The lesions  
tended more to be caseous and lacked fibrosis and calcification  
For example in Ghon's series which was quite similar in size  
and mode of selection there were 24 per cent of calcification  
while Blacklock's revealed only 6.5 per cent In other parts  
of the world the roentgen diagnosis is aided by calcification



(McPhedran, Meyers, Chadwick) Here again, however, one must pause to question whether these Scotch children, mostly of poor families, may not have suffered more from huge dosage than the middle class children of the others.

The tuberculin reactions were sufficiently corroborative for the average methods and dosage. The few that were positive that did not show any lesions (75 per cent Mantoux) may easily have been overlooked pathologically, while the 85 per cent Mantoux reactions negative with lesions may have been due to small dosage, temporary anergy or other factors well known to those working in this field.

Most of the pathologic anatomy, although not as detailed as that of some German authors, is largely a confirmation of previous work without much of the theoretical discussion.

There were three main routes of infection observed in the series: aerogenous or bronchiogenic, gastro-intestinal and cervical (tonsillar). In 25 per cent the origin was not found. In four there was a double infection in both lungs and abdomen. The predominant route was found to be aerogenous to the lungs, and most of the gastro-intestinal infections were of bovine origin, a source rapidly becoming extinct in other parts of the world. This series did not generally justify the idea of a primary localization of bacilli in other parts of the body and secondarily reaching the lung. In such cases the lung lesions were characteristically secondary.

There were, however, twenty-five cases in which no primary lesion was found, but in most of them the lymph nodes indicated that a lesion was in the immediate vicinity and was perhaps too small to be seen or was actually in a bronchio-pulmonary node. In four, the lesions were along the trachea, indicating an infection downward from the cervix, or one that came directly through the trachea (Ranke), or one that passed through the lungs as a latent bacillus or in a phagocyte, to lodge in this particular group of lymph nodes. In any event, such nodes are extremely rare.

While the preceding observations are interesting, the greatest value from the standpoint of pathogenicity appears in the entirely new observations on the course of the infection within the lymph nodes of the lungs. Charts are presented in which the course of each infection is clearly diagramed.

From the right upper lymph nodes the predominant drainage is to the right superior tracheobronchial nodes and up the right tracheal and about a third into the right deep cervical nodes. The decreasing ages of the lesions were ascertained by a gradual lessening of encapsulation and caseation. About half of the right inferior tracheobronchial, left superior tracheobronchial and left tracheal nodes were involved, while a few infections reached the left inferior tracheobronchial and a few less descended to the abdominal nodes. The same general proportions prevailed for infections of the left upper lobe. In the lower lobes the involvement reached the inferior tracheobronchial nodes most and diffused upward and outward about in the ratio of the proximity of the nodes to the progressing infection. The abdominal infection frequently ascended into the mediastinal nodes.

The work secures classic status from its discussion of the typing of the tubercle bacilli in the pulmonary, abdominal and cervical lesions (with a repetition of Griffith's, Park's and others) on the various lesions of surgical tuberculosis. This bacteriologic correlation is the "keystone of the arch" that was lacking in earlier works. The typing was based on the various differences between the true human (eugonic) and true bovine (dysgonic) strains.

The chief means for differentiation were as follows: (1) the well known characteristic of the human type to form pigment on glycerinated serum medium, (2) the inability of the bovine type to grow on glycerinated medium, (3) the classic difference in the reaction in rabbits. All these factors and others were combined until it seems highly probable that the error was at most slight. It demonstrated clearly that only about 30 per cent of cultures were typical on isolation, while the others conformed to type only after one, two or three transfers on culture medium or after animal passage. This shows how great the variability of the tubercle bacillus is. In three certified human type strains there was practically no virulence for guinea-pigs. In the whole series there was only one mixed infection—a simultaneous human pulmonary and a bovine abdominal infection. One rabbit was thought to have been infected spontaneously with the bovine bacillus. There were

only two bovine aerogenous pulmonary infections to be added to the half dozen already in the literature. Even in Glasgow, where the bovine infection is quite prevalent, the pulmonary route for bovine bacilli is rare. As to the bovine infections they were nearly always in the gastro-intestinal tract (81.8 per cent of all the gastro-intestinal lesions and about 27 per cent of all dying of tuberculosis). Some were ulcerous, others were only glandular. Many were more or less benign in type.

The surgical tuberculosis consisted in a lower bovine incidence (64.3 per cent) than others obtained in Scotland (Mitchell, 88.9 per cent, Griffith, 71.4 per cent). The bone lesions were lower still, 34.6 per cent. In fact, the bovine lesions were chiefly in the gastro-intestinal canal, where milk furnished the infection.

Thirty-six specimens yielded no cultural results, and only 64.6 per cent (86.6 per cent human and 56.2 per cent bovine) of the antiformin treated specimens yielded cultures. It would seem that the percentage recovery in this type of material is rather low compared to the results of others. The author rightly recommends direct inoculation when possible. He suggests that some of the bacilli may be dead or have poor adaptability. When it is recalled that a generation ago (before cultures were being made) most bacilli in smears were considered dead, it seems that here again methods should be examined more closely before such a suggestion is made.

Finally, let it be said that this work has leveled a powerful indictment against the cattle inspection of this region of Scotland. Whether it is due to the cloudy atmosphere (permitting the survival of the bacilli) or to laxity remains for the future to reveal. In spite of the fact that "the Ayrshire herds are carefully inspected" and "that 80-90 per cent of the milk is pasteurized," there must be a great deal of contaminated and unpasteurized milk pooled with the other. The facts cannot be evaded.

**Synopsis of Gynecology Based on the Textbook Diseases of Women** by Harry Sturgeon Crossen M.D. F.A.C.S., Professor of Clinical Gynecology, Washington University Medical School and Robert James Crossen M.D. Instructor in Clinical Gynecology and Obstetrics, Washington University School of Medicine. Fabrikoid. Price \$2.75. Pp. 227, with 110 illustrations. St. Louis: C. V. Mosby Company, 1932.

This synopsis is offered primarily for the use of medical students who intend to enter some field of medicine unrelated to gynecology. The content is taken from the textbook "Diseases of Women," by the same authors. The subject matter of approximately 1,200 pages has been condensed into 225 pages. The actual word content is something more than this ratio, as a much smaller type has been employed. The condensation has been well done but obviously at the sacrifice of much that is pertinent and valuable to the student who is acquiring a perspective in medicine. There is a place for quiz compends, but for the medical student who should obtain an insight into the part that gynecology occupies in the field of medicine this synopsis is quite inadequate. The reasoning, the deductions, the debatable issues necessarily omitted in this synopsis are included in all the standard textbooks on this subject and should be brought to the attention of every medical student during the period he is studying gynecology.

**Roslinne Jittya ta nervova sistema. Za redaktsiyu zasli Prof. A. I. Heymanovicha.** Pratsi ukrainського derjavnogo psikhologicheskogo institutu. Tom XX [Vegetative Life and the Nervous System. Edited by Prof. A. I. Heymanovich. Transactions of the Ukrainian Psychoneurologic State Institute. Volume XX.] Paper. Price 3 Karbovanetz 40 Kopaks. Pp. 200. Charkov: Dvoy medichno vidavniststvo, 1932.

This volume contains twenty-three contributions dealing with some clinical, physiologic and pathologic problems pertaining to the sympathetic nervous system. Some articles deal with such subjects as "syndrome of crocodile tears," "auriculotemporal syndrome and innervation of the sudoriferous glands of the face," "mutual relationship between the liver and the brain," and "atypical migraine." Some contributions could be recognized as having appeared before in German periodicals, which, however, are not referred to by name. This is altogether unfortunate, as the volume is published in a Ukrainian language that only remotely resembles Russian. It is quite familiar to the Ukrainians of the former Austrian empire, and contributions published in such a rare tongue cannot be popular because of a limited scope of readers. The paper, printing and pictures are poor.

**A Community Medical Service Organized Under Industrial Auspices in Roanoke Rapids North Carolina** By I S Falk, Ph D Don M Griswold MD Dr P H and Hazel I Spicer With Reports on Certain Phases of the Organization By David Riesman MD Sc D and George P Muller MD Publications of the Committee on the Costs of Medical Care No 20 Paper Price 90 cents Pp 105 Chicago University of Chicago Press 1932

This is a report of the plan by which hospital and medical services are supplied to 4,919 mill employees who paid 25 cents weekly, an annual total of \$3,708, the mill corporations paying the salaries of physicians and nurses, fixed charges and other expenses to the extent of \$56,485, while the non-mill population pays \$53,611 for individual treatment from the system, which also receives \$4,732 from the Duke Endowment and the county commissioners for the care of the indigent. It is claimed that the medical care received by the mill families is generally of high grade and more adequate at less cost than that received by the non mill population, while the average net income of the physicians is greater than the average in the United States. The average weekly wage of mill employees is \$17.50 and for families \$24.50 while the average for non-mill families is \$27.16. When the contributions of the corporations to the medical service are included as wages-in-kind, the average annual income of a mill family is \$1,320 and of a non-mill family \$1,412, which would seem to indicate that the employers saved \$92 a year per employee through the scheme. The report notices that, owing to the dependence of the plan on absentee owners, "The medical organization lives from hand to mouth and its operation is dependent upon current income from the mills and employees." A final comment notes that the present depression has led to a reduction of physicians' salaries 10 per cent and the number of nurses from three to one and the employees have voted to double their contributions, the additional 25 cents weekly to be applied to physicians' salaries.

**Wetter und Krankheiten vom Standpunkte des praktischen Arztes** Von Oberstadtarzt Dr Viktor Baar *Boards* Pp 171 with 90 monthly weather tables Vienna Verlag Ars Medici 1932

This is a unique attempt to chronicle for a term of years (1919-1926) the weather and the chief forms of illness and death in Vienna. While many of the facts recorded are interesting and perhaps suggestive, it does not seem possible to draw clear-cut conclusions from the complicated mass of data in which dust, heat and cold, sunshine, direction of the wind and phases of the moon all play their part. Few readers will be able to extract from this material information of value enough to justify the expenditure of time in assembling it.

**A Syllabus of Lectures on Gynecology for Nurses** Prepared by a Committee Appointed by The American Gynecological Society Paper Price 50 cents Pp 41 New York The Committee 1932

This syllabus is a companion to the syllabus on obstetrics for nurses published two years ago under the auspices of the American Gynecological Society. It is an excellent composite of the subject matter deemed essential in the instruction and training of the undergraduate nurse in the field of gynecology. Nine lectures are presented in thirty-five pages of text. They cover anatomy, physiology, disorders of menstruation, inflammatory diseases, tumors, obstetric injuries and malpositions of the uterus, special gynecologic disorders, gynecologic nursing and gynecologic operations. The committee has pointed out in the foreword that this syllabus is offered as a convenient outline for the instructor while almost a textbook for the pupil nurse and can be modified to suit any local technique or point of view. The directness, simplicity and authority of this syllabus should lead to its general adoption in the training schools of the country.

**Hospitals and Child Health Hospitals and Dispensaries Convalescent Care Medical Social Service** Reports of the Subcommittees on Hospitals and Dispensaries Clifford G Grulee MD Chairman Convalescent Care Adrian V S Lambert MD Chairman Medical Social Service Ida M Cannon RN Chairman White House Conference on Child Health and Protection Cloth Price \$2.50 Pp 279 New York & London Century Company 1932

This book presents the conclusions of three subcommittees of the White House Conference on Child Health and Protection based on a study and investigation of the whole problem of the relationship of the hospital toward the health and welfare of children. The first part of the book presents the report of the Subcommittee on Hospitals and Dispensaries, of which

Clifford G Grulee, MD, of the Rush Medical College of the University of Chicago, is chairman. This part surveys the situation in children's and orthopedic hospitals, dispensaries and posture clinics. The second part presents the report of the Subcommittee on Convalescent Care, of which Adrian V S Lambert, MD, of the Welfare Council of New York City, is chairman. This part considers the situation in convalescent homes and offers practical suggestions for improving the service and increasing the number making use of convalescent care. The third section, occupying more than half of the book, is the work of the Subcommittee on Medical Social Service, of which Ida M Cannon, RN, of the Massachusetts General Hospital, is chairman. It describes in detail conditions obtaining in rural and urban communities and recommends the extension of social service in these fields.

## Medicolegal

### Compensability of Traumatic Hysterical Paralysis

*(Rystedt v Minneapolis Moline Power Implement Co (Minn.) 242 N W 625)*

The employee in this case was engaged in moving bundles of steel rods, about 16 feet long, by means of a crane. In order to lift and move them a chain was passed around the center of the bundle of rods to be moved. In one particular bundle, weighing approximately 1,500 pounds, the chain was not centered accurately, so the employee placed his right shoulder under the heavier end to hold up the rods as the bundle was moving. While in that position, the chain slipped or slacked so that a sudden jar of the bundle subjected the employee's shoulder to a great strain under the excessive weight. The pain was so severe that he could not go on with his work for about fifteen minutes. He then worked the rest of that day and until the afternoon of the next day, when he became so sick as to need medical attention. As a result of the accident, the employee claimed an inability to use his right arm. The industrial commission awarded him compensation and the employer carried the case to the Supreme Court of Minnesota.

The employee's wife testified that the shoulder was swollen when the employee arrived home the day of the accident, and that there was a red spot and some bluish spots on it when she applied cold water packs. Examinations made by physicians, several days after the accident, disclosed no organic lesion or objective evidence of injury. While an expert in neurology, said the court, testifying for the employer, conceded the existence of hysterical paralysis, he was of the opinion that it did not originate from the accident. Other medical experts, called by the employer, likewise attributed the disability to causes other than the accident. None of them claimed that the employee was malingering. Medical experts testifying for the employee, on the other hand, testified that he was afflicted with hysterical paralysis of the right arm and shoulder, which rendered him unable to work, and that such paralysis resulted from the accident. At the time of the trial no organic disability could be found traceable to the accident; the inability to use the arm was functional. Either the will power or the nerves failed to move the muscles of the right shoulder and arm, and medical authority seems to agree that hysterical paralysis as effectively prevents the use of members or parts of the body as true paralysis does. The evidence in the case was to the effect that a slight accidental injury is more likely to cause hysterical paralysis than a serious injury.

From the evidence, said the court, it must be conceded that the industrial commission could properly find that the accidental injury proximately caused the hysterical paralysis. The court then, in holding the disability compensable, cited *Welch v Fairmont Railway Motors* 180 Minn 411, 230 N W 897, in which case, after calling attention to the fact that at common law damages could be recovered for traumatic neurosis caused by the negligent act of another, the Supreme Court of Minnesota said:

Under the Compensation Act the injured workman does not recover damages as such for an injury but receives a stated compensation fixed by the statute as compensation for disability and he may have compensation for neurosis if it is a proximate result of his injury and results in disability.

**Malpractice Removal of Soft Palate, Uvula, and Pillars in Course of Tonsillectomy**—The defendant was sued for malpractice. It was claimed that in performing a tonsillectomy he removed the uvula, the posterior and anterior pillars on the right side of the plaintiff's throat and a portion of her soft palate. The defendant, while denying that he had removed any portion of the soft palate, admitted that the uvula and the pillars had been removed because of the diseased condition of the plaintiff's throat. Several physicians testified for the defendant that if the plaintiff's throat was diseased, as claimed by the defendant, it was necessary in performing the operation to remove the uvula and the pillars but that it was bad surgery to remove them if the throat was normal. These witnesses had not examined the plaintiff's throat prior to the operation. The plaintiff's family physician who referred the case to the defendant, and another physician who had been called in consultation, both testified that they had examined the plaintiff's throat prior to the operation and had found it normal. The family physician further testified that it was not necessary to remove the parts referred to and that an ordinarily skilful surgeon would not have done so. This evidence, said the Supreme Court of Oklahoma, is sufficient to sustain the finding of the jury that the defendant was guilty of negligence in performing the tonsillectomy. It was not error for the trial court to permit the plaintiff and several nurses to testify that the uvula, pillars, and a part of the soft palate had been removed. They had testified that they knew the location of the parts removed and what they were, and that any person examining the plaintiff's throat could readily see that they had been removed. The injury complained of, said the court, is objective in nature and a lay witness may testify with respect to the matter.—*Govan v McCord (Okla)*, 11 P (2d) 141

**Evidence Opinion of Expert Based on Testimony**—The appellant contested the probate of a will, contending that the testator was insane at the time of its execution. At the trial two psychiatrists were called by the proponents of the will. These witnesses were present during the entire trial and heard all the evidence produced by both parties. Over the appellant's objection, they were permitted to give their opinions, based solely on such evidence, as to the testator's sanity at the time the will was executed. The action of the trial court in this respect was erroneous, the appellant complained. Probably the usual method in eliciting testimony from an expert witness, said the Supreme Court of Colorado is to have him testify in answer to hypothetical questions which assume that all, or certain parts of the testimony are true. But the authorities seem to permit the procedure followed here. In Wigmore on Evidence (ed 2), p 1095, section 686, it is said

Where an expert witness has not had personal observation of matters of fact in the case in hand, but has listened to or read any or all of the testimony or depositions to such matter of fact, he may be asked by the party calling him, to state his conclusion, without specifying in the question the data forming the basis of the conclusion

—*Callahan v Feldman, In re Callahan's Estate (Colo)*, 11 P (2d) 217

**Dentists Delegation of Professional Duties**—The plaintiff in this case, Sproul, sued the defendant, a dentist, for the return of fees paid for a set of false teeth that he contended did not fit him. He further contended that his contract with the dentist had a personal element in it that could not be assigned, such as has a contract with a surgeon engaged to perform an operation, but that the dentist did assign a part of the duties involved in making the plate. A dentist, says the Supreme Court of Kansas, does not impliedly warrant to his patient that he himself will do all the work involved in the construction of a set of false teeth. The court will take judicial notice of a common practice in the dental profession for a dentist to take the impression of a patient's jaw and do all things that have to do with the fitting of teeth in the mouth, and then to send the plate to what is known as a mechanical dentist for vulcanizing and polishing. Furthermore, continued the court, the analogy presented by the plaintiff would be more nearly correct if the dentist were compared with one who prescribes glasses for a patient and then sends the prescription to an optical company, equipped with the machinery to grind the lenses according to the prescription. The fact that a dentist constructs one set of teeth that does not fit the patient and then

constructs a second set which does not fit on the first trial in the patient's mouth does not entitle the patient to sue for a return of the fee paid to the dentist for constructing the teeth. The patient must accord the dentist a reasonable opportunity to fit him. What constitutes a reasonable opportunity must depend on the facts and circumstances of each individual case and is for the jury to determine. Sometimes a defect may be corrected by a little filing away of a place where the plate rubbed the gums. Sometimes the teeth can be filed and made to fit. Sometimes plates can be filled up a little in some place so that they will fit. Any of these things might be done in a few minutes. It would be a harsh rule that would deprive a dentist of pay for his services on account of defects which could be remedied by a few moments' work. The judgment of the trial court for the dentist was affirmed.—*Sproul v Russell (Kan)*, 11 P (2d) 978

## Society Proceedings

### COMING MEETINGS

American College of Physicians Montreal February 6-10 Mr E R Loveland, 133 135 South 36th Street Philadelphia, Executive Secretary  
Annual Congress on Medical Education, Medical Licensure and Hospitals Chicago February 13-14 Dr W D Cutter Council on Medical Education and Hospitals 535 North Dearborn St, Chicago Secretary  
Pacific Coast Surgical Association Del Monte Calif, February 23-25, Dr Edgar J Gilcreest, 384 Post Street San Francisco, Secretary  
Southeastern Surgical Congress Atlanta, Ga, March 6-8 Dr B T Beasley, 45 Edgewood Avenue, Atlanta, Secretary

### CENTRAL SOCIETY FOR CLINICAL RESEARCH

Fifth Annual Meeting, held in Chicago, Nov 4, 1932

(Concluded from page 70)

#### Roentgenography of the Peripheral Arteries

DRS EDGAR V ALLEN and JOHN D CAMP, Rochester, Minn. The arteries of the extremities can be visualized by injection of Thorotrast (25 per cent thorium dioxide solution) into the lumens of the brachial and femoral arteries. The injections are painless when carried out under local anesthesia, it is not necessary to expose the arteries. Ten cubic centimeters is injected into the brachial and 25 cc into the femoral arteries. The method is of value in demonstrating patency or occlusion of arteries which cannot be determined by clinical examination. Occlusion of the arteries above the points of injection allows filling of the arterial parts as desired. Pictures obtained in this manner are extremely valuable in studying morphologic changes in the lumens of the vessels. Occlusive arterial disease of any extent can be recognized easily if due attention is given to interpretation of the films

#### DISCUSSION

DR BAYARD T HORTON, Rochester, Minn. This is a very interesting piece of work which has been presented. This type of work is still in its infancy and will probably open up new fields for clinical investigation. It can be used to give additional information about vascular diseases which cannot at present be obtained by other methods. It could certainly be used in determining the situation of abnormal arteriovenous communications in extremities. This is particularly true with reference to acquired arteriovenous fistulas, which frequently result from stab wounds or gunshot wounds. The surgeon is interested in knowing whether the abnormal communications involve the deep or the superficial vessels, and accurate information regarding these points can be obtained by this method of study. This alone is of extreme importance from the standpoint of surgical intervention. It is also applicable to the study of intracranial vascular lesions and probably will be of use in the study of intrathoracic and abdominal vascular conditions.

DR E V ALLEN, Rochester, Minn. We realize that it is difficult to interpret roentgenologic observations in such a study as this because of relative inexperience. We are learning now what a normal artery looks like and by careful checking we are beginning to find out what all these shadows mean.

# The Electrocardiogram in Coronary Thrombosis

DRS FRANK N WILSON, PAUL S BARKER, L L KLOSTERMEYER and A G MACLEOD, Ann Arbor, Mich Study of a group of cases of coronary thrombosis emphasizes the diagnostic value of a series of electrocardiograms The progressive change in form of T, the occurrence of partial or complete block, paroxysmal ventricular tachycardia, and the sudden development of intraventricular block or of very small complexes are of diagnostic importance In addition, characteristic and more lasting QRS changes often occur, not as yet fully described These fall into two groups, the first characterized by small complexes and broad and conspicuous Q waves in lead I, the second by prominent Q waves in leads II and III

## Effect of Anoxemia on the Electrocardiogram of Normal Persons

DRS L N KATZ and W W HAMBURGER, Chicago A series of experiments were made on twenty normal individuals breathing an atmosphere the oxygen content of which was gradually diminished to 7 volumes per cent (without accumulation of carbon dioxide) Anoxemia decreased the height of the T wave and depressed the ST level These changes resemble those reported during attacks of angina pectoris and so favor the view that ischemia causes the electrocardiographic changes in angina pectoris In these normal persons, electrocardiographic changes as marked as those seen in anginal attacks occurred without evidence of pain This indicates that the electrocardiographic changes and the pain may not be produced by the same process It must be borne in mind that disease of the heart may alter its response to anoxemia and to pain producing stimuli

## DISCUSSION ON THE ELECTROCARDIOGRAM

DR HAROLD FEIL, Cleveland The last statement of Drs Katz and Hamburger is interesting because here there is ischemia without pain I wonder whether cerebral ischemia can be playing a part in the lack of response to stimuli

DR S M WHITE, Minneapolis I think that all who are interested in cardiology appreciate the character of the work that is coming from Dr Wilson's laboratory It is particularly significant that Dr Wilson and his co-authors stress serial electrocardiographic tracings in coronary thrombosis One of the difficulties encountered is that there are a number of other conditions in which the electrocardiographic changes of thrombosis may be simulated It seems to me, however, that one of the most important steps in the progress of medicine has been a serial study of the electrocardiogram Individuals whose tracings have been taken for the first time often give moderate deflections which may be said to be suggestions of coronary thrombosis and yet a serial study shows that they were not progressive changes and the final determination shows that the coronary was not the basis of the changes found I should like to ask whether consideration has been given to the idea that these functional changes which are added to those spoken of as definitely anatomic, can be due to functional changes in the vessels, such as spasm in the vessels, and whether this could play a part in the so-called functional changes of the myocardium

DR FRED M SMITH Iowa City It is well to bear in mind that cardiac infarction may produce various alterations in the electrocardiogram Some of these particularly those pertaining to the T wave and the RT and ST segments, are more conspicuous than others After all it is not so much the character of the alteration as the succession of changes that is distinctive of acute myocardial damage In this connection I should like to call attention to some work that is being done at the University of Iowa Fowler and Rathe have found that the ligation of the third and fourth subdivisions of the coronary arteries of the dog invariably produces characteristic changes in the electrocardiogram In some instances the lesion in the myocardium was so small that it is doubtful whether it would have been found at necropsy had not the ligature directed attention to the location These observations would indicate that the electrocardiogram is very sensitive to changes in the myocardium and it is believed that they may hold for man We have already observed in a few cases clinical confirmation of the results A patient was admitted to the University

Hospital a few days ago with congestive failure and paroxysmal dyspnea On the third night following admission he experienced for the first time a peculiar substernal pressure There were no apparent changes in the physical signs, yet in the subsequent electrocardiograms, taken at daily intervals, alterations were noted which we believe to be indicative of coronary occlusion

DR HARRY L SMITH, Rochester, Minn In a group of cases in which the diagnosis has been coronary occlusion and the diagnosis has been verified at necropsy, the electrocardiogram has been negative However, in these cases the infarctions were not multiple and the distribution of the coronary arteries was typical I should like to ask the authors whether they have had such cases and, if so, how they explain the negative electrocardiogram

DR WILLIAM B KOUNTZ, St Louis There is a difference in the electrocardiogram between anoxemia and ischemia The two things cannot be separated clinically but they can be experimentally Anoxemia lowers and later inverts the T wave Ischemia changes the ST interval primarily I wonder whether the distinction between the electrocardiogram in patients under anoxemia and with angina pectoris is not concerned with the accumulation of end-products of metabolism in the heart in the latter case, whereas these products are washed out of the heart by the blood in anoxemia and do not reach a degree of concentration that will change the electrocardiogram to a considerable degree

DR R G PEARCE, Akron, Ohio Physicians lately have gotten away from the lactic acid idea and the relationship of carbon dioxide in the theory of muscular contraction This is a definite physiologic problem and Hill has given a good review of it in a recent issue of *Physiological Reviews* The article throws some light on the subject

DR DON C SUTTON, Chicago Dr Katz has called attention to the fact that marked anoxemia can occur without pain, and I feel that the pain of angina shows diminished flow of blood to the myocardium However, I believe that anoxemia is too narrow a term

DR FRANK N WILSON, Ann Arbor, Mich I should like to say a few words regarding the electrocardiographic diagnosis of myocardial infarction with particular reference to the RS-T segment Many observers have described changes in this segment similar to those that occur in myocardial infarction in other conditions In most cases, however, the changes have not been exactly the same as those seen in myocardial infarction, and one cannot feel certain that they were produced in the same way In coronary thrombosis the RS-T displacement is almost always in opposite directions in leads II and III This may depend on the location of the infarct, and an infarct that has an unusual location may give a different picture Nevertheless, curves that show an RS-T displacement that has the same direction in all three leads cannot be considered altogether typical of coronary thrombosis In the second place, the displacement of the RS-T segment that occurs in myocardial infarction is always or almost always followed by progressive and characteristic changes in the T deflection Similar changes in T have been observed to follow RS-T displacement in man in no other condition except stab wounds of the heart In pericarditis and in pneumonia RS-T displacement has been observed, but in the recorded cases it has gradually disappeared without changes in T of the type seen in myocardial infarction One cannot be sure, therefore, that it is similar in origin or in significance Changes in the RS-T segment and in T are of more value in the diagnosis of myocardial infarction when they are accompanied by characteristic changes in the QRS deflections than when they occur alone Regarding the absence of electrocardiographic changes in myocardial infarction it sometimes happens that the changes are transient and the electrocardiographic examination is not made at the proper time to detect them It may be that the location of the infarct is not such as to produce any changes, or that the infarct is too small to produce recognizable changes in the three standard leads In some cases, changes in precordial or anterior-posterior leads have been recorded when there were no changes in the standard leads The rapidity with which the infarct develops may be important, it is possible that infarcts that develop slowly may fail to modify the electrocardiogram

DR L N KATZ, Chicago It has been our experience that the electrocardiogram of recent coronary occlusion does not always fit into the  $T_1$ ,  $T_2$  types of curves Dr Bohning and I are publishing a series of such curves In addition we are describing a tall, upright T wave, the inverse image of the ordinary negative coronary T wave, which we think is equally characteristic We are calling this the positive coronary T wave Dr Kissin and I have made a study of lead IV (Wolferth and Wood) in twenty-five normal subjects, eleven cases of recent coronary occlusion, and eighty-six other abnormal heart cases Characteristic changes were found in one or more of the four leads in each one of the eleven cases of coronary occlusion Six of these cases which showed nothing unusual in the ordinary three leads had characteristic changes in lead IV We therefore advocate the routine use of the fourth lead in all patients suspected of recent coronary occlusion The nondevelopment of chest pain in these normal cases is not due to cerebral anoxemia In the work of Rothschild and Kissin, and in some similar unreported work of our own, patients with angina pectoris, subjected to this test, had pain despite simultaneous development of signs of cerebral anoxemia Furthermore, Dr Kissin, working in our laboratory, has shown that pain will develop in an exercising muscle during generalized anoxemia without local stasis and will disappear with the elimination of this generalized anoxemia The pain described by Lewis during muscular ischemia therefore appears to be due to the lack of oxygen and not to local stasis So far as I can see there is no evidence that ischemia does anything in the production of electrocardiographic changes or pain that anoxemia by itself cannot do In our experiments we were careful to see that no carbon dioxide accumulated, so that we were studying only the effects of decreasing concentrations of oxygen It is interesting that while anoxemia seems to be the background of both the electrocardiographic changes and pain, the processes involved in the development of these two changes apparently are different, so that in our normal subjects the electrocardiographic changes were not accompanied by pain

#### The Blood in Essential Hypertension

DR G E WAKERLIN, Louisville, Ky The action of the blood serum on the tone of arterial segments from beef mesenterics was studied in a series of thirty patients having essential hypertension and in a series of fifteen patients having normal blood pressures No significant differences were found in the vasoconstricting properties of the arterial rings in the serums of the two groups The results suggest that there is no peripherally acting pressor substance in the blood of patients with essential hypertension Some evidence was obtained for the existence of a spontaneous rhythmic motor activity resident in arterial musculature deprived of its extrinsic innervation

#### DISCUSSION

DR LOUIS LEITER, Chicago I should like to ask Dr Wakerlin whether he considered the possibility of the presence of pressor substances in ultrafiltrates of the serum or heparinized plasma, also whether the use of other arteries than the mesenteric, e g, the vertebral, might not give different results with hypertensive serums

DR E V ALLEN, Rochester, Minn In order to demonstrate absence of substances responsible for hypertension, it would be necessary to show that there are no pressor substances acting on the terminal arterioles

DR G E WAKERLIN, Louisville, Ky There are certain definite limitations inherent in the method employed For example, the process of clotting may have destroyed or altered the pressor substance originally present The use of human serums and beef arterial rings introduced an unknown species difference factor The epinephrine-like substances in the serums may have overshadowed the effect of the pressor substance unless it was present in at least moderate quantities or sensitized the vasoconstrictor nerve endings to the epinephrine-like bodies Consequently, I feel that the results, at best, represent a small link in the chain of evidence against the presence of a pressor substance in the blood in essential hypertension As is so often the case with negative results, the observations do not in themselves preclude the presence of such a pressor substance If the results had been positive, obviously they would have been significant It would be valua-

ble to use an ultrafiltrate of serum or heparinized plasma instead of serum, for similar studies The use of carotid or vertebral artery segments may also be desirable A tertiary branch of the superior mesenteric artery was employed because this vessel is known to contain relatively more smooth muscle and less elastic tissue than the carotid or vertebral arteries The superior mesenteric branch therefore would appear to be more analogous to the arterioles I have no other suggestion to make as to the possible etiology of essential hypertension I am fully aware of the obvious difference between an arterial segment in vitro and arterioles in vivo This constitutes another limitation inherent in the method I did not study any serums from patients with renal hypertension but there have been several reports in the past few years, of results by methods other than the one which I used, indicating that there may be pressor substances in the blood stream of patients with renal hypertension

#### Roentgenologic Studies of the Gastro-Intestinal Tract in Early Infancy Preliminary Report

DRS T D CUNNINGHAM, JOHN S BOUSLOG and JAMES J WALTON, Denver The studies of the gastro-intestinal tract in early infancy included observations showing the positive emptying time, absence of the visible peristalsis of the stomach, the shape of the stomach and position of the duodenum, the few haustra and the emptying time of the colon

#### DISCUSSION

DR CECIL STRIKER, Cincinnati I should like to ask whether the authors anticipate any bad effects from these x-ray exposures

DR WALTER L PALMER, Chicago I should like to ask how much variability there was in the emptying time of the stomach in infants of a given age Was it fairly constant or not?

DR T D CUNNINGHAM, Denver We anticipate no trouble from the exposures to the x-rays So far we have seen no bad effects and the work has been going on for five years In regard to Dr Palmer's question, the emptying time is our next problem I might say that, at 3 months, in general the emptying time has been four hours but we are not prepared to say that definitely

#### Behavior of Gastric Acidities During Ulcer Treatment

DR CLARENCE F G BROWN, DR RICHARD H YOUNG, STUART P CROMER and A DONALD HAUG, Chicago Conclusions concerning acid behavior in stomachs under treatment for peptic ulcer have been based on short observation periods The question of what happened to the hyperacidity during the healing process and for a long time thereafter appealed to us For the past five years, weekly test meals have been done on patients during and after several forms of ulcer therapy Nearly 5,000 gastric analyses have been studied during the last two years This material was obtained from 10,500 visits to the Gastro-Intestinal Clinic at St Luke's Hospital We feel that we have insufficient data to justify, as yet, more than general conclusions 1 Gastric acidities modify as pyloric spasm moderates This occurs if the threshold of visceral reflexes is lowered, if the exciting cause of these reflexes is quieted, or if the ulcer subsides 2 Some persons never remain within so-called normal limits, even after the ulcer is clinically improved or termed "healed" 3 It is possible for an ulcer, in an occasional case, to subside either on alkalis or on mucin when the weekly acid levels are increasing 4 It is difficult to change further the average acid levels, over a long period of time, with any treatment except mucin management In the series of mucin treated patients the acidity levels eventually came down and stayed down, although they sometimes increased during the early part of the management Many of the patients on alkalis and hourly feedings had progressively increasing acid levels without eventual moderation More definite data will be presented later The eradication of worry and fatigue, and the use of "antispasmodic" drugs seem almost as important as neutralizing feedings, powders, mucin or the elimination of infections In other words, the entire patient, the entire alimentary canal, as well as the ulcer itself must be treated properly to obtain good results All these factors affect gastric acidities



## DISCUSSION

DR. GEORGE B. EUSTERMANN, Rochester, Minn. Several thousands of these patients have been treated on the basis of this theory. There are many schools that hold that the acid factor is an important factor. My experience has been that the acid factor cannot be ignored in the pathogenesis of peptic ulcer, particularly in duodenal ulcer, which is much more frequent. Much better criteria of acid levels in patients of different sex and age are now available. It has also been found in the treatment of a large series of cases on the basis of the Sippy idea that there are variable responses. There is a group in which a good response is obtained. Then there is a second group in which the neutralization method gives no help. The more that some of these patients are treated and the more frequently that they are fed, the greater is the acid stimulus. This subject is of great importance. The mucin method of treatment is a help, but the mucin therapy has the disadvantage of being very distasteful to the patient, the patients tire of it. In some patients it has the effect of increasing acidity, and in certain instances it has been found to be dangerous, especially in cases with chronic degenerative renal and hepatic lesions. We have not found that any of the newer preparations of mucin avoid these possibilities. I think that all in all the experiences of Dr. Brown and his associates have been almost what every one's experiences have been. Further study should be carried out. I believe it has been brought out that in a patient with gastric carcinoma the acid has not been seen to diminish as carcinoma progresses. Harper has recently done some work on animals, which is to be reported soon. He proves the importance of the acid factor in the pathogenesis of ulcers, its increase during formation of the ulcer and its decrease during the healing stage, but I must confess that we have not yet found the parallel in human ulcer.

DR. FRED M. SMITH, Iowa City. During the past three years I have been greatly interested in the altered physiology of the stomach associated with peptic ulcer. Patients have been studied during periods of distress and at varying intervals during treatment. During periods of distress there is invariably an increase in the tone and peristaltic activity of the stomach and an active secretion of hydrochloric acid. In general, it would seem that these features are intimately associated. However, I have frequently observed a continuation of the increased tone and peristaltic activity after the free acid was neutralized by alkalis. After the patient has been in the hospital a few days and is free from distress there is often considerable regurgitation of bile, which would appear to be an important factor in the neutralization of the excess acid.

DR. SIDNEY PORTIS, Chicago. I should like to ask Dr. Brown and his associates whether they have any conclusions to show that there is a decreased peptic activity while mucin therapy is being carried on. It would seem to me from some of the experiments that it is a question of peptic activity and not the presence of hydrochloric acid. I wonder whether it could not be tested by some simple method to see if there is a diminution of activity. It is interesting to note the wave of thought in regard to the etiology of ulcer. There were many who believed that hydrochloric acid was a factor. Lately has come the mucin therapy, which shows that healing goes on in the presence of acid.

DR. CLARENCE F. G. BROWN, Chicago. In answer to Dr. Eusterman we feel that if there is an acid factor in the pathogenesis of ulcer, an attempt must be made to find some method of treatment that will end up with a lower gastric acidity, week after week and month after month. We have demonstrated that acid levels eventually moderate on mucin therapy, while they may rise with alkalis. Perhaps it Dr. Eusterman is right these mucin cases will not recur as many times as we see them recur now on alkalis. We recognize the taste factor and have had only a slight difficulty in having patients take the mucin. The product is being greatly improved in this respect. We have seen no manifestations that could be called dangerous. I am aware of Hurst's statements that in Barford's work the acid remained at a constant point or higher after treatment. This work consisted of a few observations on a few patients and is insufficient for a conclusion. Data must be obtained at weekly intervals for at least (Our patients average over nine months none are

considered under four months.) We failed to find evidence of any similar work in the literature. In regard to Dr. Smith's remarks, I agree that the acidity does not parallel distress. The explanation of this is not clear. Whether there is a change in the visceral sensory threshold of which we know nothing is a question. We believe that the element of spasm is an important factor in distress and has a bearing on the acidities. So far as bile is concerned, every time we find bile the acid is down. This forces us to regard regurgitation as a part of the mechanism of acid control. The intrinsic gastric acidity regulatory factors are now being studied and evaluated. Dr. Portis brought up the subject of the etiology of ulcer, which I do not feel is pertinent to discuss in this paper. I think that an open mind must be kept until more is learned from the literature on experimental and clinical work before a decision on this is made. We have not done sufficient Metz tube experiments to report. The point of this paper was to stress the behavior of acid levels over a period of months and in some cases of years.

### Physiology of the Colon II The Effects of Cathartics on and the Motor Activity of the Colon

DRS. J. ARNOLD BARGEN and L. M. LARSON, Rochester, Minn. The effects of many cathartics on the isolated colon loop of the dog have been studied. There is a direct relation between mucus secretion and the effectiveness of a cathartic. The secretory and motor activity of the isolated colon can be recorded accurately by observation of the loop with the naked eye and by kymographic tracings. Significant data on colonic movements have been obtained.

## DISCUSSION

DR. GEORGE B. EUSTERMANN, Rochester, Minn. I should like to ask whether any of this work throws any light on our clinical problems. Every few days we see a patient who has developed a paralytic ileus. I should like to ask if this work on the colon has thrown any light on the more successful therapeutics of this condition.

DR. WALTER L. PALMER, Chicago. I should like to ask whether the authors have made any observations on the effect of cathartics given by mouth.

DR. J. ARNOLD BARGEN, Rochester, Minn. In answer to Dr. Palmer's question I will say that all the cathartics were given by mouth. The effect was studied on the isolated loop of colon. I am not prepared to answer Dr. Eusterman's question.

### Cholecystography Its Diagnostic Value

DRS. WALTER L. PALMER and A. N. FERGUSON, Chicago. Gallbladder dye was given intravenously to 2069 patients, according to the technic described by Case in 1929. Most of these patients had gastro-intestinal complaints, but the majority had no clinical evidence of biliary tract disease. Results were divided into three groups. In group 1, normal visualization with no stones was reported in 1,398, or about two thirds of the total. Such a report was found to represent a normal gallbladder in at least 98 per cent of the patients, judging from our collective clinical and operative data. In group 2, stones were demonstrated in 191 patients with various concentrations of the dye and different types of stones. Fifty-one patients were operated on and stones were found in 50, an accuracy approaching 100 per cent. Group 3 included those showing impaired function of the gallbladder with no x-ray evidence of stones. Nonvisualization was reported in 310 patients. Eighty-nine were operated on and 81 had pathologic evidence of gallbladder disease, an accuracy of 91 per cent. In the 221 not operated on a clinical diagnosis of gallbladder disease was made in 102, an apparent accuracy of 46 per cent for the dye test. A faint visualization was reported in 170 patients. Thirteen were operated on and 9 had pathologic evidence of gallbladder disease, an accuracy of 70 per cent. One hundred and twenty-four were not operated on but a clinical diagnosis of gallbladder disease was made in 33, or 27 per cent. Study of all patients in whom stones were found at operation showed that the preoperative cholecystographic report was "nonvisualization with no evidence of stones" in approximately 60 per cent of the cases and that stones had been demonstrated in 40 per cent.



## DISCUSSION

DR GEORGE B. EUSTERMAN, Rochester, Minn. There is no procedure that has given rise to more wrong diagnoses than the roentgenologic. The number of men throughout the country who will operate purely on roentgen diagnosis is amazing. I want to commend the men who bring up this study. I hope it has wide publicity. I think all the conclusions mentioned are quite identical to conclusions I made four or five years ago. I must emphasize the fact that x-ray men, laboratory men and clinicians must work together. Cholecystographic diagnosis is extremely valuable in competent hands. While one may be criticized for using the oral method of administration of the dye, I see no reason for changing to the intravenous method. The oral method is extremely accurate when positive observations agree with the clinical evidence. If the first test is not positive, it should be repeated if cholecystic disease is suspected. I have also found that in patients with early low grade jaundice there may be use for the cholecystographic procedure, as evidence may be found of stones or an enlarged gallbladder especially the latter in cases of obstructive jaundice due to malignant processes involving the terminal bile duct.

DR W. H. COLE, St. Louis. There are many difficulties which arise when an attempt is made to express diagnostic accuracy of cholecystic disease in percentages. One of these difficulties is encountered when one attempts to classify gallbladders as normal or pathologic as seen in the operating room through a laparotomy incision. In several instances the gallbladder appeared normal to the naked eye and even to palpation but contained one or more tiny stones in the fundus or cystic duct. It is also possible that there are functional derangements which are not manifested by gross pathologic changes. I agree that absence of shadow, and the presence of negative or positive shadows in the cholecystogram, are the most important points in the diagnosis of cholecystic disease.

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After a period of control observations which usually showed a remarkable consistency in the response to carotid sinus pressure, the effect of various drugs was observed. All reactions were studied with the string galvanometer. The following drugs were used: epinephrine, ephedrine, barium chloride, calcium gluconate, caffeine, digitalis, metrazol, coramine and thyroxine. Epinephrine in five subjects repeatedly and con-

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Titles marked with an asterisk (\*) are abstracted below

### American Journal of Surgery, New York

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- Head Injuries and Some of Their Complications G Horrax Boston —p 1
- Certain Factors in Operative Mortality of Acute Appendicitis F Christopher and W K Jennings Evanston, Ill.—p 16
- New Fracture, Roentgen Ray and Orthopedic Table The Author's Original Orthopedic Table Redesigned G W Hawley Bridgeport Conn.—p 19
- Problems in Treatment of Varicose Veins G de Takáts, Chicago—p 26
- Reliability of Cancer Statistics H B Wood Harrisburg, Pa.—p 31
- \*The Well Leg Countertraction Method Details of Technic R Anderson Seattle—p 36
- Cholesteatoma Originating in Skull Bones Causing Symptoms of Intracranial Pressure B J Alpers and R Harrow Philadelphia—p 51
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- Fibromyoma of Rectum Report of Case H D Caylor Bluffton Ind.—p 62
- \*Reconstruction Arthroplasty Operations for Hip S Kleinberg New York.—p 64
- \*Peripheral Vascular System in Chronic Arthritides E M Bick New York—p 71
- Role of Sympathetic Nerve Surgery in Vascular Disorders of Extremities F Jelsma and R G Spurling Louisville Ky.—p 76
- \*Improved Method of Operation for Uterine Malposition C B Sacher Dallas Texas—p 82
- Paresis and Obstruction of Jejunum Secondary to Hysterectomy E H Schneider Los Angeles—p 85
- Left Frontal Lobe Abscess Following Depressed Skull Fracture G H Patterson Los Angeles—p 88
- \*Postoperative Hernia Consideration of Etiologic Factors R W McNeely and M E Lichtenstein Chicago—p 90
- Primary Tuberculosis of Breast I E Mahoney Los Angeles—p 97
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- Do Sympathetic Nerves Transmit Painful Impulses? Report of Case J Browder Brooklyn—p 100
- Nontraumatic Perforation of Common Bile Duct C F Vale and H Shapiro Detroit—p 103
- Hydraulic Vicious Circle as It Develops in Intestine Effect of Intra-Intestinal Pressure on Pathology and Physiology of Bowel C van Zwalenburg Riverside Calif.—p 104
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- Blood Vessel Ligation Technic Successive Steps in Tying Granny' and Square Knots S I Weiner Chicago—p 123
- Multiple Film Cassette with Grating Localizer to Aid in More Precise Identification and Localization of Renal Calculi at Operation W W Fray and W T Hill Rochester N Y—p 124
- Metropolitan Hospital Sponge Holder F M Al Ahl New York—p 129

**The Well Leg Countertraction Method.**—According to Anderson fractures of the lower extremity and the pelvis can now be treated by a new method of skeletal traction which, though simpler in application, obtains better results. The principle depends on the utilization of the well leg alone for countertraction. The technical considerations are as follows: The well leg is held in adduction at the hip while applying the cast. The well foot is held at right angles with the foot in slight valgus (eversion or pronation of the foot). The sole of the well foot is padded with thin soft flexible felt and with a good amount of sheet wadding. A four-inch reinforcement of plaster should be smoothly applied over the entire plantar surface of the cast on the well foot; this should be molded accurately to fit the sole. Sufficiently large openings should be cut in the cast over the malleoli of both injured and uninjured ankles before the splint is incorporated. The cast should be cut out later over the posterolateral aspect of the head or heads of the fibulae. Pain or trouble with the well leg is usually attributed to careless application of the cast. Continued complaint demands a change of cast. Pain in the region of the well hip is usually indicative of too rapid or too much traction. In most cases when the lever arm is drawn down at

a right angle with the longitudinal axis of the leg, the requisite amount of traction has usually been exerted. Overtraction should be avoided, especially in fractures of the femoral neck, by checking with repeated roentgenograms. Overtraction is a frequent cause of nonunion.

**Hip Operation.**—Kleinberg states that the reconstruction arthroplasty operation is an outgrowth of the Whitman reconstruction procedure. The technic employed is that described by Whitman plus the use of a double layer of fascia lata to form a sort of bursa between the newly formed femoral head and the acetabulum. The fascia is secured to the femur and through drill holes in the base of the neck. It has so far been used for ununited fracture of the neck of the femur and osteoarthritis of the hip for which the Whitman reconstruction operation is chiefly intended. It has, however, also been applied in two cases of ankylosis of the hip in which this operation has the advantage over an ordinary arthroplasty in that the trochanter was displaced downward, thus securing a fair range of abduction. The reconstruction arthroplasty, which combines the technic of the reconstruction operation and hip arthroplasty, is indicated when either of these procedures is necessary and is likely to prove more effective than either because of the additional technical features. The author reports seven cases in which operations have been performed, the patients varying in age from 6 to 75 years. There were three cases of ununited fracture of the hip, two cases of hypertrophic osteoarthritis of the hip and two cases of ankylosis of the hip, one of two years' duration and one of twenty-four years' duration. The results, while not final because of the short time since the operation, are encouraging.

**Chronic Arthritides.**—In observing 332 patients with rheumatoid conditions, Bick found that the systolic blood pressure in osteoarthritis is in most cases considerably above the normal for each age group. In rheumatoid arthritis it is definitely subnormal. In nonspecific infectious arthritis there is no deviation from normal variations. Gradual occlusion of the peripheral arteries is a characteristic observation in rheumatoid arthritis. In advanced cases this may lead to gangrene of the distal part of the extremities. Osteoarthritis is an uncommon observation in obliterative vascular disease. Varicosities occur in a large proportion of patients suffering from osteoarthritis (77 per cent). The latter, conversely, is frequently found in patients in whom the chief or only complaint is varicose veins. The histopathologic appearance of the articular and periarticular tissues is consistent with these clinical observations and is logically deducible. Rheumatoid arthritis and osteoarthritis are further differentiated by their respective vascular changes into two distinct diseases, nonspecific infectious arthritis being left as a third, heterogeneous, group.

**Uterine Malposition.**—A method of operation that overcomes all the disadvantages and fulfils the cardinal requirements for uterine displacements is described by Sacher. It is indicated in any form of uterine displacement and prolapse except an acute inflammatory condition. The technic is as follows: The cause is removed. This may include a dilation and curettage, a cauterization of the cervix, repair of the pelvic floor or the removal of part or all of one or more of the pelvic organs. The fundus of the uterus is lifted into position. Curved Kelly forceps are pushed from behind forward through the broad ligament close to the uterus under the tube and under the round and ovarian ligaments. A loop of the round ligament is brought back through the opening in the broad ligament. This is repeated on the opposite side. Vertical incisions are made through the peritoneum just medial to the openings in the broad ligaments or just below the level of attachment of the ovarian ligaments. Curved Kelly or mosquito forceps are pushed from one opening to the other between the serous (peritoneum) and muscular layers of the uterus, thus forming a canal. Chromic catgut number 2 is sutured through the loop of each round ligament and brought through the canal to the opposite side. Each round ligament is scarified. Traction is made on the catgut sutures and the round ligaments are pulled together in the center of the canal where they are sutured together with chromic catgut number 2. The traction sutures are removed. Another suture is taken through each ligament on both sides just medial to the broad ligaments. The openings into the peritoneum are closed. The author believes that this method of operation has the following advantages:

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- Certain Factors in Operative Mortality of Acute Appendicitis F Christopher and W K Jennings Evanston Ill.—p 16
- New Fracture Roentgen Ray and Orthopedic Table The Author's Original Orthopedic Table Redesigned G W Hawley Bridgeport Conn.—p 19
- Problems in Treatment of Varicose Veins G de Takáts Chicago —p 26
- Reliability of Cancer Statistics H B Wood Harrisburg Pa.—p 31
- \*The Well Leg Countertraction Method Details of Technic R Anderson Seattle.—p 36
- Cholesteatoma Originating in Skull Bones Causing Symptoms of Intracranial Pressure. B J Alpers and R Harrow Philadelphia.—p 51
- Treatment of Traumatic Tetanus Report of Five Cases C O Bates Greenville, S C.—p 58
- Fibromyoma of Rectum Report of Case H D Caylor Bluffton Ind.—p 62
- \*Reconstruction Arthroplasty Operations for Hip S Kleinberg New York.—p 64
- \*Peripheral Vascular System in Chronic Arthritides E. M. Bick New York.—p 71
- Role of Sympathetic Nerve Surgery in Vascular Disorders of Extremities F Jelsma and R C Spurling Louisville, Ky.—p 76
- \*Improved Method of Operation for Uterine Malposition C B Sacher, Dallas Texas.—p 82
- Paresis and Obstruction of Jejunum Secondary to Hysterectomy E H Schneider Los Angeles.—p 85
- Left Frontal Lobe Abscess Following Depressed Skull Fracture G H Patterson Los Angeles.—p 88
- \*Postoperative Hernia Consideration of Etiologic Factors R. W. McNealy and M E Lichtenstein, Chicago.—p 90
- Primary Tuberculosis of Breast L E Mahoney Los Angeles.—p 97
- Tetanus Following Acute Appendicitis W P Kroger Los Angeles.—p 99
- Do Sympathetic Nerves Transmit Painful Impulses? Report of Case. J Browder Brooklyn.—p 100
- Nontraumatic Perforation of Common Bile Duct C F Vale and H Shapiro Detroit.—p 103
- Hydraulic Vicious Circle as It Develops in Intestine Effect of Intra Intestinal Pressure on Pathology and Physiology of Bowel C van Zwalenburg Riverside Calif.—p 104
- \*Phlegmonous Gastritis W L Watson New York.—p 113
- Blood Vessel Ligation Technic Successive Steps in Tying "Granny" and Square Knots S I Weiner, Chicago.—p 123
- Multiple Film Cassette with Grating Localizer to Aid in More Precise Identification and Localization of Renal Calculi at Operation W W Fray and W T Hill Rochester N Y.—p 124
- Metropolitan Hospital Sponge Holder F M Al Akl New York.—p 129

**The Well Leg Countertraction Method**—According to Anderson fractures of the lower extremity and the pelvis can now be treated by a new method of skeletal traction which, though simpler in application obtains better results. The principle depends on the utilization of the well leg alone for countertraction. The technical considerations are as follows. The well leg is held in adduction at the hip while applying the cast. The well foot is held at right angles with the foot in slight valgus (eversion or pronation of the foot). The sole of the well foot is padded with thin, soft flexible felt and with a good amount of sheet wadding. A four-inch reinforcement of plaster should be smoothly applied over the entire plantar surface of the cast on the well foot. This should be molded accurately to fit the sole. Sufficiently large openings should be cut in the cast over the malleoli of both injured and uninjured ankles before the splint is incorporated. The cast should be cut out later over the posterolateral aspect of the head or head of the fibulae. Pain or trouble with the well leg is usually attributed to careless application of the cast. Continued complaint demands a change of cast. Pain in the region of the well hip is usually indicative of too rapid or too much traction. In most cases when the lever arm is drawn down at

a right angle with the longitudinal axis of the leg, the requisite amount of traction has usually been exerted. Overtraction should be avoided, especially in fractures of the femoral neck, by checking with repeated roentgenograms. Overtraction is a frequent cause of nonunion.

**Hip Operation.**—Kleinberg states that the reconstruction arthroplasty operation is an outgrowth of the Whitman reconstruction procedure. The technic employed is that described by Whitman plus the use of a double layer of fascia lata to form a sort of bursa between the newly formed femoral head and the acetabulum. The fascia is secured to the femur and through drill holes in the base of the neck. It has so far been used for ununited fracture of the neck of the femur and osteoarthritis of the hip for which the Whitman reconstruction operation is chiefly intended. It has, however, also been applied in two cases of ankylosis of the hip in which this operation has the advantage over an ordinary arthroplasty in that the trochanter was displaced downward, thus securing a fair range of abduction. The reconstruction arthroplasty, which combines the technic of the reconstruction operation and hip arthroplasty, is indicated when either of these procedures is necessary and is likely to prove more effective than either because of the additional technical features. The author reports seven cases in which operations have been performed, the patients varying in age from 6 to 75 years. There were three cases of ununited fracture of the hip, two cases of hypertrophic osteoarthritis of the hip and two cases of ankylosis of the hip, one of two years' duration and one of twenty-four years' duration. The results, while not final because of the short time since the operation, are encouraging.

**Chronic Arthritides**—In observing 332 patients with rheumatoid conditions, Bick found that the systolic blood pressure in osteoarthritis is in most cases considerably above the normal for each age group. In rheumatoid arthritis it is definitely subnormal. In nonspecific infectious arthritis there is no deviation from normal variations. Gradual occlusion of the peripheral arteries is a characteristic observation in rheumatoid arthritis. In advanced cases this may lead to gangrene of the distal part of the extremities. Osteoarthritis is an uncommon observation in obliterative vascular disease. Varicosities occur in a large proportion of patients suffering from osteoarthritis (77 per cent). The latter, conversely, is frequently found in patients in whom the chief or only complaint is varicose veins. The histopathologic appearance of the articular and periarticular tissues is consistent with these clinical observations and is logically deducible. Rheumatoid arthritis and osteoarthritis are further differentiated by their respective vascular changes into two distinct diseases, nonspecific infectious arthritis being left as a third, heterogeneous, group.

**Uterine Malposition.**—A method of operation that overcomes all the disadvantages and fulfils the cardinal requirements for uterine displacements is described by Sacher. It is indicated in any form of uterine displacement and prolapse except an acute inflammatory condition. The technic is as follows. The cause is removed. This may include a dilation and curettage, a cauterization of the cervix, repair of the pelvic floor, or the removal of part or all of one or more of the pelvic organs. The fundus of the uterus is lifted into position. Curved Kelly forceps are pushed from behind forward through the broad ligament close to the uterus under the tube and under the round and ovarian ligaments. A loop of the round ligament is brought back through the opening in the broad ligament. This is repeated on the opposite side. Vertical incisions are made through the peritoneum just medial to the openings in the broad ligaments or just below the level of attachment of the ovarian ligaments. Curved Kelly or mosquito forceps are pushed from one opening to the other between the serous (peritoneum) and muscular layers of the uterus, thus forming a canal. Chromic catgut number 2 is sutured through the loop of each round ligament and brought through the canal to the opposite side. Each round ligament is scarified. Traction is made on the catgut sutures and the round ligaments are pulled together in the center of the canal where they are sutured together with chromic catgut number 2. The traction sutures are removed. Another suture is taken through each ligament on both sides just medial to the broad ligaments. The openings into the peritoneum are closed. The author believes that this method of operation has the following advantages:

tages 1 It elevates the uterine fundus 2 It elevates the ovaries and fallopian tubes 3 It keeps the uterus in the anterior position by a forward and downward pull of the round ligaments, the resistance of the encircling loop, and the intra-abdominal pressure which is exerted on its posterior surface 4 The uterosacral ligaments assist the position by keeping the cervix back 5 It is simply and easily performed 6 There is no chance for adhesions and obstruction 7 No recurrences have been observed 8 It does not favor postoperative hernia 9 It does not interfere with pregnancy

**Postoperative Hernia**—From their clinical and experimental observations, McNealy and Lichtenstein believe that postoperative herniations of the anterior abdominal wall are due to excessive tension on the suture line, malocclusion of the incised layers of the abdominal wall, perforation of the wall by fat or omental tags, infection of the fascias with subsequent sloughing, muscle injury or paralysis, or systemic conditions such as diabetes, tuberculosis, syphilis and occasionally localized carcinomatous infiltration. They conclude that the transversalis fascia and the transversus muscle play an important part in maintaining, when intact, the integrity of the anterior abdominal wall. Accurate approximation of like structures is conducive to firm union. The intelligent application of abdominal binders and adhesive tape to the abdomen following closure of an abdominal wound in a manner to relieve the tension on the suture line assists in securing firm union.

**Phlegmonous Gastritis**—Watson reviews twelve reported cases and one of his own of phlegmonous gastritis and believes that the condition is not as rare as it was formerly thought to be. There are two forms of the disease, the diffuse and the circumscribed. The diffuse form is fatal, the circumscribed form, not necessarily. The diagnosis has never been made before operation or necropsy. He suggests as additional aids to diagnosis, the abdominal puncture after the technic of Neuhoff and routine preoperative roentgenograms of the abdomen. Treatment must be surgical, the procedure elected depending on the type of the disease. For the localized type, gastric resection is done, for the diffuse type, surgery offers the palliative relief of a jejunostomy. The etiology is not clear, but in a large number of cases there is a pre-existent gastric disease, often carcinoma or ulcer, which may provide for the easy entrance into the submucosa of the streptococcus, the organism usually isolated from the phlegmonous gastric wall. All cases should be reported in detail, so that with increased material at hand the symptoms and diagnosis may be more clearly understood and the treatment improved. The surgeon when confronted with an acute inflammatory lesion in the upper part of the abdomen should always consider the possibility of a gastric phlegmon.

### Archives of Neurology and Psychiatry, Chicago

28 757 968 (Oct.) 1932

- Relation of Filtrable Viruses to Diseases of Nervous System T M Rivers, New York—p 757
- \*Pathogenesis of Changes in Cerebrospinal Fluid in Meningitis F Fremont Smith, Boston—p 778
- Histologic Studies in Meningitis G B Hassin, Chicago—p 789
- Inflammatory Disease of Central Nervous System So Called Non suppurative Encephalitis and Encephalomyelitis J H Globus New York—p 810
- \*The Brain in Acute Rheumatic Fever Nonsuppurative Meningo-Encephalitis Rheumatica N W Winkelman, Philadelphia, and J L Eckel, Buffalo—p 844
- Sensory Cortical Area Experimental Anatomic Investigation E C Milch, New York—p 871
- \*Are Physiologic Disturbances Related to Acute Psychotic Process in the Mentally Ill? A W Hackfield, Zurich, Switzerland—p 883

**Cerebrospinal Fluid in Meningitis**—According to Fremont-Smith, meningitis is an empyema of the ventriculo-subarachnoid space. The cerebrospinal fluid in meningitis has the composition of pus. The chief changes in the cerebrospinal fluid in meningitis are an increase in pressure, cells and protein and a decrease in sugar and chlorides. The most important causes for increase in pressure are dilatation of the intracranial blood vessels and mechanical obstruction by the exudate and inflammatory reaction of the cerebrospinal fluid pathways. Decrease in the osmotic pressure of the blood, increase in the osmotic pressure of the cerebrospinal fluid and edema of the brain also may operate as causes. The cellular exudate comes chiefly from the blood stream and, to a lesser extent, from

the arachnoid cells. In meningitis, as in health, the chemical composition of the cerebrospinal fluid depends chiefly on the composition of the blood plasma, the cerebrospinal fluid tending to remain in osmotic equilibrium with the blood. The chief change in composition of the blood plasma in meningitis is a lowering of the chlorides, which is reflected by a parallel fall in cerebrospinal fluid chlorides. A similar fall in cerebrospinal fluid chlorides occurs whenever the plasma chlorides are decreased, notably in acute febrile diseases, such as pneumonia or scarlet fever. The decrease in plasma chlorides is the chief cause for the low cerebrospinal fluid chlorides in nearly all instances. A second factor influencing the composition of the cerebrospinal fluid in meningitis is the local breakdown of dextrose from bacterial and cellular action. This results in a lowering of the dextrose content of the cerebrospinal fluid, which may fall nearly to zero, and in an increase in acidity of the cerebrospinal fluid, chiefly due to an increase in lactic acid. This in turn results in a disturbance of the Donnan membrane equilibrium and tends to lower the chloride content of the cerebrospinal fluid, bringing it nearer to that of the blood. In addition, there is a partial breakdown of the impermeability to protein of the membranes separating the plasma from the cerebrospinal fluid. This allows protein to enter the cerebrospinal fluid, raising its protein content, which results in a lowering of the cerebrospinal fluid chlorides. As the protein content of the cerebrospinal fluid in meningitis is usually only moderately increased, so that when compared to plasma the cerebrospinal fluid remains relatively protein poor, the effect of this increased permeability on the chloride distribution is usually slight and often negligible. Occasionally, however, especially in the presence of subarachnoid block, the protein content becomes markedly increased. Under these circumstances there is also the opportunity for the greatest accumulation of lactic acid. The cerebrospinal fluid chloride level may then become appreciably closer to that of the plasma. Rarely this combined effect may be quantitatively greater in lowering the cerebrospinal fluid chlorides than the effect of the fall in plasma chlorides.

**The Brain in Rheumatic Fever**—Winkelman and Eckel describe five cases of rheumatic infection with clinical histories and physical observations. From their observations and a review of the literature they are led to believe that acute rheumatic fever does not produce a specific change in the brain that can be recognized either grossly or microscopically. The changes that are present in the brains of patients who have shown neurologic and psychiatric symptoms during the course of acute rheumatic fever are similar in every way to the changes that occur in any other acute infection and toxemia. The role of edema of the brain in the production of symptoms of so-called cerebral rheumatism has probably been greatly underestimated. Unless relieved, a vicious circle may be initiated. The endarteritis of the small vessels, which has been found in every case, has probably two causations—purely mechanical, as the result of edema of the brain, and toxic irritation through the blood stream. Areas of destruction, or acellular areas, in the brain are found frequently in cases of acute rheumatic fever, as they are in other infections and toxemias, and may produce a permanent clinical picture if sufficiently numerous. The occurrence of endocarditis can completely change the picture in the brain. Here the effect of embolic phenomena must be kept in mind. Purpura of the brain is a possibility, it may give evidence of its occurrence by similar lesions on the skin.

**Physiology and Psychoses**—A brief review of the literature revealed that functional derangements of various of the physiologic processes have been demonstrated repeatedly in patients suffering from an acute affective psychosis. The results of gastric analyses and blood sugar tolerance tests, made by Hackfield, on fifty-four patients, have further demonstrated the existence of such disturbances during the acute stage of the psychosis. Furthermore, he shows that with improvement or clearing up of the psychotic process these functional disturbances again approach a normal state, indicating that for any given patient these observations represented a pathologic state. Emotional states produced by immediate environmental stimuli, including the technic of the test, had no apparent effect on the results. These dysfunctions appeared rather stable, and together with the psychologic symptoms



probably represented the expression of the same underlying process. In speaking of improvement heretofore, the author has taken the psychologic disturbances into consideration, but paralleling these the physiologic disturbances also approach accepted normal standards. What usually happens in this type of patient is that he either improves slowly, rapidly recovers completely or passes over into a chronic state. From a psychiatric standpoint the clinical picture in the chronic cases then changes, hallucinations or delusions, or both, may persist or the patient deteriorates. When the patient presents this state of the psychosis, these physiologic disturbances can no longer be demonstrated.

## California and Western Medicine, San Francisco

37 217 288 (Oct.) 1932

- \*Renal Tuberculosis Why Clinically Established Renal Tuberculosis Never Completely Heals R Day, Los Angeles—p 217
- Bacteriophage Method of Treatment of Infected Wounds F H Albee, New York.—p 221
- Cancer of Rectum D Smith San Francisco—p 223
- Craniofacial Injuries Study of Twelve Hundred Cases D H Werden Los Angeles—p 226
- \*Sigmoid Sinus Thrombosis. R Levy and H L Laff Denver—p 233
- Weight Reducing Diets T H McGavack, San Francisco—p 238
- An Aid in Collections J H Shephard San Jose—p 242

**Renal Tuberculosis**—According to Day, when a tuberculous lesion has advanced to the renal pelvis or collecting tubules, renal tuberculosis never completely heals because of the handicap of hindered drainage and back-pressure due to tuberculous changes in the ureteral wall, that is to say, aside from other possible reasons a tuberculous kidney excreting tubercle bacilli cannot recover because an incurably strictured ureter interferes with normal drainage and peristalsis. When complete healing does occur, the tuberculous process is limited to the cortex and it has never extended to the pyramid or collecting tubules. Until the tuberculous process has extended to a calyx or the collecting tubules, pus and tubercle bacilli of renal origin will not be found in the urine and therefore, up to this time, renal tuberculosis cannot be said to have been "clinically established."

**Sigmoid Sinus Thrombosis**—Levy and Laff present a case showing the classic signs of sigmoid sinus thrombosis in which, at operation, no sigmoid sinus could be found. Following the eradication of a hemorrhagically inflamed mastoid the patient recovered, without further intervention, supporting the view that the sepsis was due to an osteothrombotic phlebitis of the small veins. A specimen found in the dissecting room showing a unilateral absence of the sigmoid sinus is presented in support of their contention that such cases may be encountered at operation. This type of sigmoid sinus anomalies should be kept in mind while one is operating for sinus thrombosis. The authors state that the diagnosis of sinus thrombosis should be made from the history and clinical symptoms rather than by a too rigid dependence on the results of special tests that have been devised. These tests are of greater value in determining the side for operation in cases of bilateral otitis media. Blood cultures and blood studies, and especially the Schilling count are of diagnostic and prognostic aid and should be utilized. Although a panicky attitude at the first rise of temperature in the course of a suppurative otitis media is to be deplored, surgical intervention in properly diagnosed cases of sinus thrombosis is productive of brilliant results.

## Journal of Biological Chemistry, Baltimore

58 1 387 (Oct.) 1932 Partial Index

- Maximum Rotations and Correlation of Disubstituted Acetic Acids Containing a Methyl Group P A. Levene and R. E. Marker, New York.—p 1
- Ribosephosphoric Acid from Xanthylic Acid II. P A. Levene and S A. Harris, New York.—p 9
- Effect of Dietary Deficiencies on Phospholipid Metabolism Betty R. Monaghan.—p 21
- Comparison of Wu and Kjeldahl Methods of Serum Protein Determination. L. R. Tuchman and H. Sobotka.—p 35
- Spectrophotometric Determination of Certain Blood Pigments. G B. Kar H A. Blair and C I. Thomas.—p 63
- Studies on Crystalline Insulin VII Action of Ammonium Hydroxide and of Iodine on Insulin. H. Jensen E. Schock and E. Sollers.—p 93
- Intake in Nutrition O L. Kline J A. Keenan C. A. Elvehjem and F. B. Hart.—p 121
- Relationship Between Chemical Structure and Physiologic Response III Factors Influencing Excretion of Uric Acid A. J. Quick, with technical assistance of Mary A. Cooper, New York.—p 157

- Effect of Epinephrine on Lipid Excretion Elsie Hill and A. E. Koehler, Santa Barbara, Calif.—p 185
- Assay of Vitamins B and G as Influenced by Coprophagy N B. Guerrant and R. A. Dutcher.—p 225
- Determination of Iron in Cow's Milk and Human Milk. F. Reis and H. H. Chakmakjian, Boston.—p 237
- Acid Base Equilibrium in Abnormal Pregnancy D M. Kydd, H. C. Oard and J. P. Peters New Haven, Conn.—p 241
- Acid Base Balance Disturbance of Pregnancy V C. Myers, E. Muntwyler and A. H. Bill, Cleveland.—p 253
- Iron and Thorium Precipitation of Biologic Fluids for Sugar and Other Analyses A. Steiner, F. Urban and E. S. West.—p 289
- Action of Copper in Iron Metabolism C. A. Elvehjem and W. C. Sherman.—p 309
- Studies on Ketosis II Comparative Ketolytic Action of Glucose Galactose, Fructose and Sucrose. H. J. Deuel, Jr., Margaret Gulick and J. S. Butts.—p 333

## Journal of Experimental Medicine, New York

56 455 608 (Oct. 1) 1932

- Studies on Typhus Fever IX Serum Reactions of Mexican and European Typhus Rickettsia H. Zinsser and M. R. Castaneda Boston.—p 455
- Immunologic Behavior of Second Protein (Livetin) of Hen's Egg Yolk. T. H. Jukes and H. D. Kay.—p 469
- Properties of Causative Agent of Chicken Tumor VI Action of Associated Inhibitor on Mouse Tumors J. B. Murphy and E. Sturm, New York.—p 483
- Active Immunization Against Poliomyelitis M. Brodie.—p 493
- Comparison Between Convalescent Serum and Nonconvalescent Serum in Poliomyelitis M. Brodie.—p 507
- Studies on Quantitative Action of Specific Enzyme in Type III Pneumococcus Dermal Infection in Rabbits K. Goodner and R. Dubos.—p 521
- Study of Therapeutic Mechanism of Antipneumococcal Serum on Experimental Dermal Pneumococcus Infection in Rabbits I Presence in Antipneumococcal Serum of Non Antibacterial Therapeutic Factor A. B. Sabin New York.—p 531
- Formation of Macrocyles and Microcyles from Red Corpuscles in Hanging Drop Preparations J. Auer St. Louis.—p 551
- Studies on Immunity to Swine Influenza R. E. Shope, Princeton N. J.—p 575
- Studies on Schwartzman Phenomenon I Detoxification of Meningococcus Culture Filtrates H. M. Klein New York.—p 587
- Infectious Myxomatosis (Sanarelli) in Pregnant Rabbits. D. H. Sprunt, New York.—p 601

## Medical Annals of District of Columbia, Washington

1 247 280 (Oct.) 1932

- Status of Serum Therapy in Poliomyelitis W. H. Park, New York.—p 247
- Certain Noteworthy Faults in Medical Writing R. M. Hewitt, Rochester, Minn.—p 254
- \*Clinical Evaluation of Transurethral Resection of Prostate. W. C. Stirling Washington.—p 257
- Typhus Spotted Fever Group A. S. Rumreich Washington.—p 263
- Chemomedical Studies of Pathologic Conditions M. X. Sullivan Washington.—p 266

**Transurethral Resection of Prostate**—Stirling states that the indications for resection over prostatectomy are rather definite and clear cut and include all minor obstructions at the vesical outlet and malignant conditions of the prostate. In the large, vascular, intravesical type of prostate, prostatectomy is the method of choice. In the early detection and removal of prostatic obstruction, resection has great possibilities, obviating the impairment of the vital systems so often seen following complete blockage. The average hospitalization period is approximately ten days, which saves the patient considerable time and money. Prostatic resection is a valuable adjunct to prostatectomy but will not replace it. The same careful preparation with decompression and building up of the cardiac and renal systems is required in resection as in prostatectomy. Resection of the prostate is a highly technical procedure and should be undertaken only by those capable of handling any surgical complication that may ensue.

## Public Health Reports, Washington, D C

47 2039 2076 (Oct. 14) 1932

- \*Epidemic of Motor Neuritis in Cincinnati, Ohio Due to Drinking Adulterated Jamaica Ginger History, Symptomatology and Clinical Report. C. E. Kiely and M. L. Rich.—p 2039
- Id. Pathologic Report. A. R. Vonderahe.—p 2053
- Id. Epidemiologic Report. T. J. LeBlanc and W. E. Brown.—p 2054

47 2077 2103 (Oct. 21) 1932

- Experimental Transmission of Tularemia by Mosquitoes C. B. Philip G. E. Davis and R. R. Parker.—p 2077

**Epidemic of Neuritis Due to Adulterated Jamaica Ginger**—Kiely and his associates state that on March 9, 1930,



press dispatches reported an epidemic paralysis of the legs ascribed to drinking jamaica ginger extract, popularly known as "jake." The following day there was admitted to the Cincinnati General Hospital a tabetic patient whose condition was complicated by rapidly progressive foot and wrist drop, and within a few days patients began coming with self-made diagnoses. Up to and including May, 316 cases were admitted. Confiscation of the suspected shipment by the state prohibition department, an order prohibiting the sale of jamaica ginger except on a physician's prescription, and the widespread publicity given by the press are to be credited with the suppression of the epidemic. The first symptoms of which these patients complained after drinking the "new" jamaica ginger were those of gastro-enteritis. They were not present in every patient. This gastro-intestinal upset occurred within a few hours after drinking and varied greatly in its severity. In some it consisted only in a feeling of nausea, in others there was only diarrhea. In the majority, however, there was nausea, vomiting, abdominal cramps, and diarrhea. In a few the condition was severe enough to cause blood in the stool. As a rule these symptoms lasted only a day or so, and then after an interval the symptoms of neuritis appeared. A sample group of 117 cases was studied from an epidemiologic standpoint. No history of contact could be elicited to which any real significance could be attached. No common factor appeared in food intake. Of the 117 patients 106 were males, and only 1 was a Negro. Ages ranged from 21 to 79, with a mean age of 47.8 years. On questioning, all but one patient admitted drinking jamaica ginger. The time between the ingesting of the jamaica ginger and the onset of paralysis varied between thirteen hours and six weeks. From seven to fourteen days is a fair approximation of this factor. The majority of patients had been regular drinkers of jamaica ginger, some over a period of ten years, and so jamaica ginger alone was not the causative agent, but some element, unknown at that time, not ordinarily found in jamaica ginger. This element made its appearance in the ginger probably sometime during January or February, 1930.

### Radiology, St. Paul

19 203 268 (Oct.) 1932

- Organization of Tumor Clinic in General Hospital M. Cutler, Chicago —p 203
- Peculiar Regeneration of Bone, Following Maggot Treatment of Osteomyelitis M. M. Pomeranz, New York.—p 212
- Visceral Displacement in Pneumonia Roentgenologic and Experimental Study Chung Wu, Chicago—p 215
- Technic of Intravenous Urography Apparatus and Method of Compressing Ureters, Used in Four Hundred and Eleven Cases J. Abowitz, Los Angeles—p 228
- \*Spectrophotometric Analysis of Color of Skin Following Irradiation by Roentgen Rays M. Harris, E. T. Leddy and C. Sheard, Rochester, Minn.—p 233

**Spectrophotometric Analysis of Color of Skin**—Harris and his associates give detailed readings of six subjects whose skin was analyzed every day for fifty-two days after roentgen irradiation. The authors state that spectrophotometry offers an accurate method of recording the changes of color in the skin following irradiation. The course of the erythema is cyclic, or wavelike, persisting over a period of months. Fairly definite points occur chronologically at which the erythema is at a minimum. Changes in the content of pigment of the skin are due to a primary effect of the rays on the pigment, or on the metabolic processes by which pigment is formed. The content of pigment is immediately affected by irradiation. The pigment follows a course independent of the course of the erythema. The hue of the skin following irradiation remains constant. The changes in redness of the skin following roentgen irradiation are due to changes in the saturation of the hue.

### Southwestern Medicine, Phoenix, Ariz

16 397 442 (Oct.) 1932

- Neurologic Diagnostic Criteria in Diseases of Brain C. W. Irish, Pasadena, Calif.—p 397
- Plastic Surgery C. von Wedel, Oklahoma City—p 409
- Facial Pains Differential Diagnosis and Treatment M. A. Glaser, Los Angeles—p 411
- Brain Abscess from the Otolgists' Point of View R. A. Duncan, Amarillo, Texas—p 417
- Immunization and Treatment of Diphtheria C. F. Milligan, Clayton, N. M.—p 420
- Brain Abscess and Meningitis from Trauma (Fractured Skull) Case Report E. B. Thompson, El Paso, Texas—p 424

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

2 739 780 (Oct. 22) 1932

- The Harveian Oration on the Debt of Preventive Medicine to Harveian and the College of Physicians, Delivered Before the Royal College of Physicians of London, Oct. 18, 1932 G. Newman—p 739
- Genital Prolapse Observations on Its Diagnosis, Mechanism and Treatment H. L. Murray—p 744
- Etiology of Dental Caries E. W. Fish—p 747
- Id. May Mellanby—p 749
- Acute Osteomyelitis in Children C. P. G. Wakeley—p 752

### Journal of State Medicine, London

40 559 618 (Oct.) 1932

- Anomalies in the Interpretation of Industrial Dermatoses R. P. White—p 559
- Problems of Immunization in Public Health C. O. Stallybrass—p 573
- Study of the Findings in One Hundred and Fifty Cases of Colitis E. C. Lowe—p 580
- \*Some Clinical Observations on Use of Thallium Acetate in Treatment of Ringworm of Scalp H. M. Mitchell—p 583
- Meat Inspection P. F. Dolan—p 589
- Bovine Tuberculosis and Milk A. McLean—p 597
- Problem of Mental Deficiency in Country District A. M. Critchley—p 603
- Pediculosis as Public Health Problem S. A. Nelson—p 608

**Thallium Acetate in Treatment of Ringworm of Scalp**—Mitchell's experience in the use of thallium acetate as a depilatory in the treatment of tinea of the scalp extends over a period of five years, during which time he treated 200 patients varying in age from 6 months to 12 years. After the examination of the urine to exclude the presence of any pathologic condition of the kidneys, which is a definite contraindication to the use of thallium, the child is weighed naked and the weight converted into kilograms and from 8.5 to 9 milligrams of the drug per kilogram is administered in a little sweetened water. A simpler procedure is to multiply the weight of the child in pounds by 4, which gives the required dose of thallium in milligrams. If proper precautions are taken, the author sees nothing against the use of thallium acetate in the treatment of ringworm of the scalp, especially in children under the age of 4. Provided the patients are kept in bed for two days after the drug has been administered, toxic symptoms rarely develop, and if they do they are seldom severe and pass off quickly. The after-treatment is most important in obtaining satisfactory results, a careful examination of the whole scalp should be made with the ultraviolet beam after epilation is apparently complete, so as to detect and remove any infected stumps that have failed to come out and thus minimize the risk of reinfection. The administration of thallium acetate should, as far as possible, be limited to children under the age of 4, and a second or third dose should be given only at considerable intervals.

### Lancet, London

2 823 876 (Oct. 15) 1932

- Establishment of Immunity in Some Infectious Fevers J. Broadbent—p 823
- Subcutaneous Rupture of Popliteal Artery Report of Two Cases C. P. G. Wakeley and W. O. Reid—p 829
- \*After Effects of Eclampsia, with Especial Reference to Hypertension and Chronic Nephritis Janet Breakey—p 832
- Influence of Sexual Cycle on Breast Lesions Helen Ingleby—p 835
- Use of Sanocrysin in Pulmonary Tuberculosis H. E. Mansell—p 837
- Manipulative Surgery in General Practice A. S. B. Bankart—p 840

**After-Effects of Eclampsia**—From her observations of a review of 333 cases of eclampsia treated since 1908 at the Jessop Hospital for Women, Sheffield, Breakey observed that in normal parous women there is a steady rise of blood pressure with increasing age, at any rate up to the age of 60. There is a slight depression between the ages of 40 and 50. After eclampsia the blood pressure rises more rapidly and to a greater height. The depression occurs as on the control curve but is exaggerated, and the readings at the upper end are modified by death in the worst cases. There is a fairly definite indication (after an initial drop) of a rise with advancing time, and a slight indication of a rise of blood pressure with further pregnancies. Chronic nephritis develops in a number of women after eclampsia, and this in some cases is severe enough to cause early death. There appears to be a direct relation between

the age and parity of the patient, and the occurrence of hypertension and nephritis. Both are more liable to occur in multiparas who are over 30 at the time of the attack. Both occur more frequently after the antepartum type. There is no evidence that subsequent conception is rendered less likely by an attack of eclampsia. Fertility is lessened after this condition in that miscarriage and stillbirth occur more frequently than in normal women. Albuminuria is much more likely to complicate subsequent pregnancies after eclampsia than in normal cases. In a certain number of cases a "toxemia sequence" occurs. Eclampsia may begin or end the sequence or may itself recur.

### Medical Journal of Australia, Sydney

2 497 528 (Oct 22) 1932

- Treatment of Compound Fractures of Lower Limb J Hoets—p 497  
Primary Treatment of Compound Fractures of Lower Limb G Bell—p 501  
Nutritional Aspects of Depopulation and Disease in Western Pacific, Especially in Papua W M Strong—p 506

### South African Medical Journal, Cape Town

6 583 614 (Sept 24) 1932

- General Principles in Preoperative and Postoperative Treatment G Sacks—p 585  
Malaria in Natal Impressions of and Personal Observations on Recent Epidemic of Malaria in Maritzburg C E L Burman—p 591  
Modified Diazot Reaction in Diagnosis of Typhoid Fever P H Symons—p 594  
Modern Developments in Treatment and Diagnosis I Radiology and the General Practitioner F H Domisse—p 598

### Chinese Medical Journal, Shanghai

46 853 964 (Sept.) 1932

- \*Relapsing Fever in Shanghai First Report R C Robertson—p 853  
\*Artificial Pneumothorax Treatment for Lobar Pneumonia Report of Six Cases K H Li—p 886  
Cyst of Urachus with Calculus Formation A C Siddall—p 894  
Dental Education in China A F Baranoff—p 899  
Entamoeba Histolytica and Trichomonas Hominis in Liver Abscess Report of Case J Gray and Mary N Andrews—p 902

**Relapsing Fever**—Robertson discusses the epidemiology of relapsing fever as it occurs in China. He presents a combined clinical and pathologic report on 350 cases in Shanghai. The laboratory investigations which are recorded are of the nature of a preliminary report. The conclusions which he draws from his observations are that 1 The louse is the most probable vector in the Shanghai cases. 2 The cultivation of the spirochete in suitable nutrient mediums has been successfully carried out. Interesting light on the life history of the spirochete is indicated by further study of the cultures from infected lice and patients suffering from the disease. 3 The immunologic phenomena which have been demonstrated have a bearing on the clinical manifestations of the disease. It is also noted that the 'adhesion reaction' will be of value in differentiating strains of spirochetes. 4 Preliminary observations on the body reservoir of the spirochetes during apyrexial periods have been made. 5 The prevalence of relapsing fever in endemic areas could be readily controlled by the application of existing public health knowledge.

**Artificial Pneumothorax Treatment for Lobar Pneumonia**—Li reports six cases of lobar pneumonia treated by artificial pneumothorax. Following treatment immediate relief of pain was noted in all cases in which pleurisy was present. Drop of temperature, pulse and respiration in each case with disappearance of dyspnea and onset of general well being was prompt. Five patients fully recovered. One of these died, but in this case the response after the first artificial pneumothorax treatment for pain, temperature, pulse and respiration was equally prompt.

### Journal of Oriental Medicine, South Manchuria

17 33-44 (Oct.) 1932

- Roentgenologic Demonstration of Spleen and Liver G Irie—p 33  
Nomenclature of Chinese Medicines T Okamitsu—p 36  
Effect of Morphine Injections on Blood Sugar and Adrenalin in Dogs Y Tachikawa—p 37  
Aspects of So-Called Krukenberg's Tumors Case of Neocecal Cancer with Ovarian Metastases Y Morikawa—p 38  
Microscopic Demonstration of Urea by Means of Xanthidrol K Ogawa—p 40  
Clinical Factors in Pathogenesis of Pleurisy in Japanese Living in Manchuria S Nishibori—p 42  
Heterogeneous Mast Cells M Saeki—p 43

### Archives de Médecine des Enfants, Paris

35 633-696 (Nov) 1932

- \*Immunization Against Measles by Placental Blood J Salazar de Souza—p 633  
Infantile Convulsions and Epilepsy G Heuyer and J Dublneau—p 645  
Urinary Lithiasis in Infancy S Mehler—p 652  
Rare Case of Systematized Osteopathy E Feiguine and S Tikhodéeff—p 654  
Intestinal Invagination in Measles Failure of Barium Irrigation Success of Surgical Intervention Case A Beraud and R Petrigiani—p 664  
Fatal Case of Postvaccination Encephalitis I Trivas—p 668  
Chronic Primary Arthritis J Comby—p 670

**Immunization Against Measles by Placental Blood**—In four years Salazar de Souza injected 160 children, exposed to measles, with blood taken from human placentas. The number of cases in which immunization was obtained varied between 85 per cent in the first year and 63.4 per cent in the fourth year. In those cases in which immunization failed, the measles almost always assumed an attenuated form, generally without catarrh of the mucosae and the bronchi. The death rate among the patients who contracted measles in spite of the injection was only 2.27 per cent, compared to 12.7 per cent among the noninjected patients. The author thinks that the drop in the percentage of immunizations in the fourth year was due to tyndallization of the placental blood with formaldehyde solution. This procedure was resorted to in the fourth year because of the persistence of occasional suppurations, but a much smaller percentage of immunizations was obtained with 10 cc injections of blood so treated than with the 4 cc. injections of nontyndallized blood or of blood tyndallized without formaldehyde solution, which were given in the first three years. After the blood has been collected from the placenta under strict aseptic conditions and has been sealed immediately in sterile ampules, it needs only to be tyndallized (without formaldehyde solution) once or twice at from 52 to 54 C to be ready for use. The injection is usually followed by a rise of temperature generally lasting two days. The injection should be given intramuscularly and care should be taken to avoid leakage into the subcutaneous tissue. The author thinks that the immunity to measles produced by placental blood is due to the individuality of this blood. With its amino acids and other hypothetic products of internal secretion, it probably acts as a nonspecific antigen, stimulating the production of antibodies and resulting in a group immunization to anaphylactic and anaphylactoid states.

### Paris Médical

2 353 388 (Nov 5) 1932

- Diseases of Children in 1932 P Lereboullet and F Saint Girons—p 333  
Prandial Diarrhea of Breast Fed Infants A B Marfan—p 366  
\*Diagnosis of Hypertrophy of Thymus in Nursling G Mouriquand and M Bernheim—p 372  
\*Treatment of Pregnant Woman Best Prevention of Congenital Syphilis E Lesné and Mme. Linossier Ardoin—p 378  
Dilatation of Bronchi in Infancy Aerial Pulmonary Cysts L Ribadeau Dumas and Rault—p 381

**Diagnosis of Hypertrophy of Thymus in Nursling**—Mouriquand and Bernheim think that in rare but indisputable cases hypertrophy of the thymus is the cause of a respiratory syndrome appearing in nurslings in the first weeks or months of life and consisting of continuous or intermittent laryngeal dyspnea with stridor and concomitant cyanosis. Differential diagnosis of thymus hypertrophy requires roentgenographic examination and sometimes therapeutic tests. Clinically it may be confused with laryngospasm and above all with congenital stridor. The authors have found that the congenital stridor is almost always decreased by hyperextension of the head, whereas in thymus hypertrophy the stridor is exacerbated by this procedure. Other causes of stridor, such as foreign objects in the trachea, congenital intralaryngeal tumor, congenital goiter and tracheal stenosis, are more easily eliminated. Roentgenographic diagnosis of hypertrophy of the thymus demands an accurate knowledge of the normal shadow of the superior mediastinum and its variations. The roentgenogram should be made with the infant upright and during inspiration, so that the mediastinal shadow will be reduced to a minimum. If under these conditions, there is a shadow which extends to the right and left significantly beyond the limits of the sternovertebral shadow and even beyond the normal shadow.

of the large vessels of the base, it may be considered as a real shadow of the thymus. It should be borne in mind that, in all forms of laryngeal dyspnea which might be confused with thymus hypertrophy, there is respiratory congestion and vascular stasis which increases the mediasthioracic shadow. In gangliopulmonary tuberculosis of early infancy which sometimes causes stridor the roentgenographic image is at times represented by a simple enlargement of the mediastinum or a rounded shadow surmounting the cardiac shadow like an enlarged thymus. Mediastinal tumors, mediastinal pleurisy and Pott's abscess are sometimes sources of confusion. The most certain criterion for diagnosis is the response to roentgen therapy. In authentic hypertrophy of the thymus the stridor and attacks of suffocation are diminished after the first irradiation. After several irradiations, respiration becomes normal and regression of the thymus is visible in the roentgenogram. If such results are not obtained and there is only a slight respiratory improvement after numerous irradiations, the diagnosis of thymus hypertrophy is doubtful.

**Treatment of Pregnant Woman to Prevent Congenital Syphilis**—Lesne and Lmossier-Ardon found that 81 per cent of the children of mothers who received antisyphilitic treatment during pregnancy were normal. In cases of paternal syphilis in which the mother appeared free from infection and did not receive antisyphilitic treatment during pregnancy, 42 per cent of the children were normal, in cases of maternal syphilis treated only before pregnancy, 28 per cent of the offspring were normal. From these results they conclude that treatment during pregnancy is the best prophylaxis for congenital syphilis and should be employed in all cases in which the parents have a history of syphilis, whether acquired or hereditary and no matter how old the infection is. The necessity for this treatment arises from the frequency of latent and masked syphilis in women, the reactivation of infection under the influence of pregnancy, and the precocity of the lesions of congenital syphilis. Intravenous injection of arsphenamine is the best treatment. Bismuth preparations should be used only in case of resistance or intolerance to arsphenamine. The series of injections must be intense, and the interval between series should never exceed three weeks during the entire pregnancy. Not only did this treatment result in 81 per cent of normal offspring in the authors' experience, but the other 19 per cent were dystrophic children with negative Bordet-Wassermann reactions. The Bordet-Wassermann reaction should be tested in every pregnant woman even in the absence of clinical signs. If the mother receives serial injections during pregnancy and the infected parent has previously received adequate treatment, the authors think that preventive treatment of the child is useless and need not be undertaken unless serologic tests (which should be made every six months during the first four years) indicate the necessity.

### Archiv fur Gynakologie, Berlin

151 1-440 (Oct. 24) 1932 Partial Index

- Aspects of Necrosis in Wall of Ovarian Cystomas L. Nürnbergger —p 16  
 Tumors of Granulosa Cells of Ovary W. P. Plate —p 26  
 New Formation of Muscle Cells in Wall of Gravid Uterus B. Fischer Wasels —p 44  
 Forceps Deliveries E. Puppel —p 86  
 \*Fate of Foreign Body Left in Abdominal Cavity G. L. Dawydov —p 98  
 \*Is Conception Capacity of Women Limited to Certain Predeterminable Days of Menstrual Cycle? G. Riebold —p 111  
 Anatomic and Functional Changes of Rectum in Carcinoma of Cervix Uteri G. Halter —p 126  
 Behavior of Trypanocidal Function of Liver During Disease of Liver, During Gestation and During Uterine Carcinoma H. Eufinger, M. Rothermundt and H. Wiesbader —p 150  
 Investigations on Influence of Gravity on Morphologic Structure of Pineal Body in Guinea Pigs H. Eufinger and H. Uhing —p 168  
 Roentgenologic Symptomatology of Osteomalacia Aspects of Viosterol Therapy H. O. Kleine —p 182  
 Significance of Function of Thyroid for Development of Castration Obesity O. Bokelmann and W. Scheringer —p 190  
 \*Hormonal Analysis of Urine and of Secretion of Mammary Gland E. W. Winter —p 201

**Foreign Body Left in Abdominal Cavity**—Dawydov relates the clinical history of a woman who had undergone a laparotomy for the removal of a fibrous nodule from the posterior wall of the uterus. With the exception of a temporary increase in the temperature the postoperative course was normal, but defecation became difficult and palpation revealed a compact mass in the posterior portion of the small pelvis. Subse-

quent examinations revealed no changes in this mass, and except for the constipation and occasional abdominal pains the woman felt well. Eight months after the operation a gauze tampon, 64 by 43 cm., was eliminated with the feces. Several days preceding this elimination, fever and peritoneal symptoms were observed, but after the tampon had been eliminated all these symptoms disappeared. Several years later the woman became pregnant and the delivery was normal. The author thinks that the penetration of the tampon into the rectum was facilitated by its incarceration between the uterus and the intestine. The tampon caused a necrosis of the intestinal wall, which finally resulted in perforation. This case induced the author to study the perforation of the intestinal wall by tampons in animal experiments. He found that small gauze tampons (6 by 4 cm.), when fixed to the rectum of dogs or rabbits, became encapsulated, for the organism has a tendency to isolate itself from the tampon by encapsulation, by elimination through the hollow organs (intestine or bladder) or by elimination through abdominal fistulas. The author thinks that the assumption that a tampon has been left in the abdominal cavity is no valid excuse for a new laparotomy when postoperative complications are absent. If the presence of a tampon in the abdominal cavity is certain and the postoperative course is normal, the tampon should not be removed until after the complete recovery of the patient. The author thinks that most methods recommended to prevent tampons from being left behind are no sure protection, but he considers helpful Doderlein's suggestion of using gauze that has been interwoven with bronze and that could readily be detected by roentgenoscopy.

**Determination of Time of Ovulation**—Riebold reaches the conclusion that Knaus's method (abstracted in THE JOURNAL, Oct. 12, 1929, p. 1183, and Dec. 5, 1931, p. 1749) for the determination of the term of ovulation is applicable in all cases of regular mensural cycles from twenty-six to thirty days. In cycles of only three weeks, ovulation can likewise be predetermined, but since in each series of menstruations there may occur a variation of phases, these determinations are not all entirely reliable and may result in failures if one tries to generalize as Knaus has done. But by taking into consideration the various clinical factors, such as the midperiod pain, the intermenstrual leukorrhea and other intermenstrual and premenstrual symptoms, and the individual mensural cycle, it will be possible in many cases to determine the sterile as well as the fertile periods, however, it is necessary to keep an exact record of the days of menstruation and of all the pertaining symptoms.

**Hormonal Analysis of Urine and of Mammary Gland Secretion**—Winter reports his investigations on the hormonal content of the urine and of the secretion of the mammary gland in the different physiologic and pathologic conditions. In the urine of the new-born child the ovarian hormone is present up to the third day after birth and the hormone of the anterior lobe of the hypophysis up to the ninth day. The mammary secretion of the newly born contains no hormones. In the colostrum of pregnant women the hormone of the anterior lobe of the hypophysis is present from the seventh month on and remains present in the mammary secretion up to the sixth day of the puerperium. The ovarian hormone is not present in the colostrum. In patients with hydatid mole, the hormone of the anterior hypophysis is present in the colostrum much earlier than during normal pregnancy. During the first stage of the menopause the urine contains the ovarian hormone, but during the last stage, as well as in genital carcinoma, pruritus vulvae and leukoplakia vulvae the urine frequently contains the follicle maturation hormone. Hormonal analysis of the urine of sexually mature women with menstrual anomalies does not explain the disturbance or give information about a suitable therapy. During dysmenorrhea the urine frequently contains the follicle maturation hormone, but during sterility none of the hormones are present in the urine. In cases of amenorrhea it is frequently possible to produce with the urine the anterior hypophyseal hormone reactions (I and II). The author thinks that the mammary secretion during pregnancy, in the newly born, during false pregnancy, amenorrhea and similar disturbances is due to a disturbance in the correlations between the ovarian and the hypophyseal hormone with involvement of the sympathetic nervous system, a predominance of the anterior lobe of the hypophysis is probably the principal cause.

## Dermatologische Wochenschrift, Leipzig

95 1569 1596 (Oct. 29) 1932 Partial Index

- Histologic Studies on Formations Resembling Vascular Tumor but of Nevus Origin and with Structure of Hemangio-Endothelioma M J Per—p 1569  
Stasis Dermatitis Following Obliteration of Veins O Meyer—p 1574  
Specificity of Lymphogranuloma Inguinale Reaction. W Frei—p 1575

### Specificity of Lymphogranuloma Inguinale Reaction

—Frei maintains that the skin reaction produced with sterilized material from buboes of patients with lymphogranuloma inguinale has a high degree of specificity. He emphasizes particularly the absolute reliability of the positive reaction, for in hundreds of control tests on persons without lymphogranuloma inguinale he did not observe a single positive reaction. One case was only apparently an exception, since it was discovered later that the genital ulceration in this woman had been preceded by lymphogranuloma inguinale. He further states that mistakes may result from the injection of material that contains bacterial impurities, for the inflammation that follows such injections may be considered an unspecific lymphogranuloma inguinale reaction. He explains the causes of the apparently erroneous positive reactions observed by other investigators. In discussing the negative lymphogranuloma inguinale reaction he admits that it is not always reliable, as the reaction may be negative even when lymphogranuloma inguinale is actually present. Further, he states that patients with lymphogranuloma inguinale may show an intensified reactivity to other substances besides lymphogranuloma inguinale material and he therefore warns that a positive reaction obtained in patients with lymphogranuloma inguinale with other than bubo material does not justify the assumption that the patient from whom the material was obtained has lymphogranuloma inguinale. To illustrate this he cites the case of a man with urethritis, whose urethral secretion produced a positive reaction in patients with lymphogranuloma inguinale, while the lymphogranuloma inguinale reaction was negative in himself and clinical observation and anamnesis revealed nothing indicative of lymphogranuloma inguinale.

## Munchener medizinische Wochenschrift, Munich

79: 1745 1784 (Oct. 28) 1932

- Observations on Clinical Significance of Hemo-Endocrinopathic Syndrome. L Riccitielli—p 1745  
Efficiency of Obstetrics in Home O Fahlbusch—p 1746  
Menstruation and Diabetes Mellitus R. Peperkorn—p 1748  
Development of Ascites Under Insulin Treatment in Bronze Diabetes and Disappearance Following Discontinuation of Insulin A. Bingel—p 1750  
Tonsils and Their Conservative Treatment with Roeder's Suction Method M. Jägermann—p 1751  
Roentgen Irradiation of Tonsils in Children. H. Zoepffel—p 1753  
Scarlet Fever and Meralgia Paraesthetica. O. Lade—p 1754  
Progress in Recognition and Treatment of Most Important Intoxications. E. Ieschke—p 1755  
Simple and Reliable Method for Determination of Blood Sugar by Means of New Absolute Colorimeter W. Thiel—p 1758  
Action of Weak Electric Current on Blood Sugar and Diabetic Disturbance of Metabolism M. Dorle—p 1761  
Treatment of Localized Perspiration by Means of Ammonium Chloride. J. Mayr—p 1762

### Ascites Under Insulin Treatment in Bronze Diabetes

—Bingel relates the clinical histories of two patients with bronze diabetes, in whom ascites developed when insulin therapy was instituted but the ascites disappeared again when the insulin treatment was discontinued. He points out that insulin edemas are well known and he explains the mechanism of their pathogenesis, but the development of ascites is somewhat different, since it is the result of indirect insulin action. Insulin produces enlargement and swelling of the liver cells as the result of glycogen storage and water intake. Because of a connective tissue covering, the outward enlargement of the liver is only slight and the effects of the swelling of the cells is largely exerted on the lymph and blood channels within the liver, and thus a congestion ascites develops.

**Conservative Treatment of Tonsils with Roeder's Method.**—Jägermann points out that Roeder considered the tonsils not only an endocrine organ and the site of formation of lymphocytes but also an important excretory organ for the lymph stream and a central regulatory organ of the entire lymph vessel system. Roeder reasoned that, when as a result of inflammation of the tonsils there is a congestion of the

lymph, the tonsils may produce injurious effects but that, if the flow of the lymph is reestablished by suitable methods, the injurious influence is counteracted, whereas when the tonsils are removed the elimination of the lymph is inhibited. Consequently he perfected and successfully employed a suction method by which pus particles and other waste materials are withdrawn from the tonsils. The author likewise found this method helpful not only in localized disorders of the tonsils but also in the sequelae of tonsillar disorders, in rheumatism, sciatica, myalgia and neuralgia, and in acute infectious diseases such as scarlet fever, measles and diphtheria. He thinks that, in view of the fact that a functional significance of the tonsils cannot be denied and that the removal of the tonsils involves dangers and does not always have the desired effect, it is advisable to try conservative therapy in the form of Roeder's suction treatment. He asserts that this method is simple and not dangerous and that it can be employed in small children as well as in old persons. Two or three treatments a week are usually sufficient, but in acute cases a more frequent application may be desirable.

## Wiener klinische Wochenschrift, Vienna

45 1337 1368 (Oct. 28) 1932

- Heredity of Syphilis R. Matzenauer—p 1337  
Symptoms of Corpus Callosum E. Risak—p. 1340  
Connections Between Intermittent Articular Dropsy and Ovarian Function A. Vogl—p 1344  
Successful Operation in Case of Bone Tumor of Membrane of Spinal Cord. Charlotte K. Krausz—p 1346  
Mechanical Icterus K. Blond—p 1348  
Prolonged Treatment and Supervision in Hematologic Disorders K. Singer—p 1349  
Intravesical Irradiation with Ultraviolet Rays. H. Meschede—p 1350  
Reexamination of Skin Reaction (Neuer) for Demonstration of Deep Gonorrheal Disorders Erna Loewy—p 1352  
Vertigo with Especial Consideration of Neurology R. Leidler—p 1352  
Specific and Nonspecific Therapy in Septic Diseases. R. Boller—p 1355

### Intermittent Articular Dropsy and Ovarian Function.

—According to Vogl, most authorities are of the opinion that the comparatively rare intermittent articular dropsy belongs to the angoneurotic disturbances, more particularly to the group of neurotic edemas, while others think that it is due to a dysfunction or hypofunction of the ovaries. As proof that disorders of the ovarian function cannot be the only pathogenic factor of intermittent articular dropsy, the author cites the fact that the disorder occurs also in men and that in women the intervals between recurrences are frequently independent of the menstrual cycle. Moreover, not all cases respond to treatment with ovarian extracts and the disorder may entirely disappear for months and even years. The latter occurrence can sometimes be traced to intense psychic alterations. The author thinks that intermittent articular dropsy is due partly to constitutional inferiority of the articular apparatus, for there is a high incidence of articular disorders in the families of these patients, and partly to a constitutional angoneurotic factor. That in some patients the attacks concur with the menstrual period he considers due to the fact that during this period the irritability and the permeability of the vascular apparatus are increased. He warns against a one-sided evaluation of intermittent articular dropsy as an endocrine, particularly an ovarian, disorder and although ovarian extracts may occasionally prove helpful, he thinks that it is wrong to consider a case as incurable if ovarian extracts do not improve the condition. On the contrary, various cases have been found to respond to different measures, to hydrotherapeutics, to salt-free diet, to a cinchophen preparation, to injections of arsenic, to the various forms of ovarian preparations, to change of climate and to hypnosis. The author thinks that the psychologic factor is probably quite often the most significant one that most of these therapeutic measures are largely nothing but a masked psychotherapy, and that spontaneous remissions are possible.

**Intravesical Irradiation with Ultraviolet Rays.**—Meschede applies ultraviolet rays with a mercury burner in a quartz tube. The tube permits inspection of the bladder, which makes it possible to apply the rays to the diseased area. In the first experiments he administered only half of the erythema dose of the external skin, but systematic cystoscopic control finally convinced him that the vesical mucous membrane has a resistance to ultraviolet rays about ten times as great as that of the skin. He employed the intravesical irradiation, especially in tuberculosis of the bladder, but tried it also

in acute cystitis. The number of irradiations varied. In some cases twelve were given and in others either more or less. The intervals between the treatments were arranged so that from one to three irradiations were given each week. On the basis of six months' experience with this method, the author concludes that it is quite promising in that formerly incurable cases can be improved so that life becomes again bearable for these patients. He further points out that ultraviolet irradiation by means of quartz tubes has also been tried in other specialties, namely, in ophthalmology for the treatment of detachment of the retina. In these cases the quartz tube is applied to the sclera and it is stated that this method surpasses the former treatments.

**Deep Gonorrheal Disorders**—Loewy reexamined a gonorrheal skin test that Neuer described in the *Wiener klinische Wochenschrift* (45:398 [March 25] 1932, abstr. THE JOURNAL, June 18, 1932, p. 2256). A preparation containing killed gonococci is applied to a scarified area. Because this reaction appeared valuable, the author decided to test its reliability. She tried it on eighty patients in different stages of gonorrhea and on twenty-six healthy persons. The results were disappointing as they tallied with the complement fixation reaction only in comparatively few cases. She concludes that in its present form the test has neither diagnostic nor prognostic value.

### Zentralblatt für Gynäkologie, Leipzig

56 2577-2624 (Oct. 22) 1932

- Delivery in Cleft Pelvis. H. Goecke—p. 2577  
 \*Is Decapitation of Delivered Head in Difficulties of Shoulder Delivery Suited to Entirely Replace Cleidotomy? A. Pohl—p. 2582  
 \*Isolated Pregnancy Intoxication of Brain (Cerebropathia Toxica Gravidarum). H. Naujoks and H. Uffenorde—p. 2588  
 Sensitivity of Muscles of Uterine Tubes in Men and Animals to Pituitary Extract and to Epinephrine. F. Kammerhuber—p. 2595  
 Treatment of Eclampsia with Choline Ester. E. Schulze—p. 2603  
 Pathogenesis of Melena Neonatorum. L. Honecker—p. 2609  
 Hormone Therapy in Menstrual Anomalies. P. Weiss—p. 2612  
 Experiences with Ovarian Hormone Therapy in Amenorrhea and Dysmenorrhea. W. Scheidt—p. 2615  
 Presence in Cerebrospinal Fluid of So Called Anterior Hypophyseal Hormone. K. Ehrhardt—p. 2618  
 Intrafollicular Ovarian Gravidity. W. Kötter—p. 2619

**Decapitation or Cleidotomy?**—Summing up the advantages and disadvantages of decapitation of the delivered head in comparison to cleidotomy during difficulties in shoulder delivery, Pohl states that much is to be said in favor of decapitation, namely, the rapidity and simplicity of the operation, the diminished danger of injuring the mother by instruments or protruding pieces of bone, and the greater reduction in the size of the shoulder girdle. Compared to decapitation, cleidotomy has no advantages and for this reason the author advises that cleidotomy be replaced entirely by decapitation with subsequent drawing down of the arms. Decapitation and not cleidotomy is absolutely necessary in the case of giant infants, in pelvic contraction, in difficulties with the soft parts, and when rapid delivery is necessary. Of course, as in every other obstetric operation the indications should be properly evaluated. Decapitation is advisable if, in case of a dead fetus following birth of the head, the delivery of the shoulders is impossible or difficult without reducing the width of the shoulders.

**Isolated Pregnancy Intoxication of Brain**—Naujoks and Uffenorde state that cerebral changes during pregnancy have as a rule been observed only as complications of other pregnancy toxicoses. However, they observed a case which proves that an isolated pregnancy intoxication of the brain is also possible. The clinical history of this patient corresponds to the results of the postmortem examination. The woman had no icterus, hyperemesis, attacks of spasms nor alterations in the peripheral nerves, but all manifestations, the psychic as well as the organic, could be explained by an isolated intoxication of the brain. The authors consider the differentiation of the isolated pregnancy intoxication of the brain, the so-called cerebropathia toxica gravidarum, from other pregnancy toxicoses not merely of theoretical importance but also of practical significance. On the basis of the reported case they recommend caution in the evaluation of psychic disturbances during pregnancy and consider it inadvisable to designate every abnormality in the psychic behavior of gravidas as merely "nervous." They think that the more severe psychic disturbances, particu-

larly those that concur with somatic cerebral manifestations, are life endangering, cannot be effectively counteracted by conservative measures and necessitate interruption of pregnancy.

### Uppsala Lakareförenings Förhandlingar, Uppsala

38 IXIX (Sept. 17) 1932 Partial Index

- Festschrift on Centennial of Uppsala Lakareförening  
 \*Investigation into Strength of Skin Capillaries and Indirectly into Vitamin C Standard of School Children in District of Norrbotten North of Arctic Circle. G. Falk, K. O. Gedda and G. F. Göthlin—part II  
 Prognostic Significance of Positive Tyrosine and Leucine Reaction in Urine in Hepatitis. B. Hamne—part VIII  
 \*Contribution to Study of Pathogenesis of Laryngopharyngeal Myoclonias. C. Grill and E. Lauren—part X  
 \*Observations on Electrocardiograms in Extrasystole. A. Kristenson—part XIV  
 \*Contribution to Question of Occurrence of Fat Substances in Sputum and Lungs. U. Quensel—part XV  
 \*Contribution to Cytology of Sputum. J. Lundquist—part XVI  
 \*Neurinoma in Gastro-Intestinal Canal. Three Cases. E. Nordlander—part XVIII  
 \*Frequency of Sarcoma in Different Age Groups. G. Nyström—part XIX

**Strength of Skin Capillaries and Vitamin C Standard of School Children**—Falk and his associates found that in school children those with high intake of vitamin C, according to the diet questionnaire, at the end of winter have high capillary strength, those with low vitamin C intake, low capillary strength. Their results corroborate that children of school age require a much larger intake of vitamin C, roughly estimated as double the amount, than do adults, to reach a normal capillary strength and a normal vitamin C standard.

**Pathogenesis of Laryngopharyngeal Myoclonias**—Grill and Lauren cite nine previously published cases of laryngopharyngeal myoclonias in which histopathologic examination was made and describe their case, interpreted as grave cerebral arteriosclerosis, in a man, aged 60, with repeated attacks of apoplexy and symptoms of pseudobulbar paralysis as well as continued, rhythmic, bilateral laryngopharyngeal myoclonias. They conclude that the lesions of the cerebellum caused the myoclonic syndrome by blockage of the regulatory influx between the olivary bodies, cerebellum and tegmental nucleus as well as the gray substance of the protuberance, thus producing a disturbance of the stabilizing mechanism in the affected musculature.

**Electrocardiograms in Extrasystole**—Kristenson found that, on experimental stimulation of points on the anterior surface of the heart, electrocardiograms of the dextrogram type are obtained from the part of the heart nearest to the basal electrode, of the levogram type from the part of the heart nearest the apical electrode, and, on excitation of an intermediary zone, electrocardiograms of transition type. The field over which this intermediary zone extends seems to be at right angles to an imaginary line of union between the two electrodes, both in his case and in those previously reported.

**Fat Substances in Sputum and Lungs**—Quensel's results apparently indicate that the lungs normally in some way participate in the fat metabolism of the organism. A storage of fat substances on the one hand, and on the other an elimination of fat substances, particularly anisotropic substances, in the urine were established.

**Cytology of Sputum**—Lundquist found that the characteristic cells of sputum, the so-called large sputum cells, identical with the so-called alveolar phagocytes, are the same in patients with various respiratory disorders and that they are present in greater number in well persons.

**Neurinoma in Gastro-Intestinal Canal**—In Nordlander's two cases of gastric neurinoma and one of neurinoma of the small intestine the tumor was not palpable. One case of gastric neurinoma presented general dyspeptic symptoms, in the other cases there were larger hemorrhages. Microscopic examination of the intestinal neurinoma, which was due to ileus, revealed signs of malignant degeneration, rare in tumors of this kind.

**Sarcoma in Different Age Groups**—Nyström reports that the official statistics on causes of death in Sweden from 1911 to 1929, containing 4,447 cases of sarcoma, together with a material of 2,080 microscopically diagnosed cases of sarcoma from different parts of Sweden, show that, apart from the relatively greater frequency of sarcoma in childhood and youth, the age curve for sarcoma quite agrees with that for carcinoma.



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## RUPTURES AND TEARS OF MUSCLES AND TENDONS OF THE LOWER EXTREMITY

REPORT OF FIFTEEN CASES

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SAN FRANCISCO

Ruptures and tears of various tendons and muscles of the body are not so rare as is supposed generally. I have mentioned the literature pertaining to ruptures of the long head of the biceps in three articles<sup>1</sup> on that subject. Little is to be found concerning such lesions in American or English medical literature. Even less has been written on similar lesions in the lower extremity, which I shall consider in this paper. Many patients with such injuries are treated for weeks or months for sprains, arthritis, neuritis or similar disabilities. In a great majority of these cases, if the rupture is extensive, an accurate diagnosis and surgical repair will not only improve the ultimate function of the limb but return the patient to activity much sooner than the usual conservative measures.

### ETIOLOGY

Any one of many factors may cause a tear or rupture in a muscle or tendon, as shown in the following outline:

- 1 Sensility
- 2 Pathologic Changes
  - (a) Arthritis
  - (b) Myositis
  - (c) Acute infectious disease
  - (d) Arteriosclerosis
  - (e) Syphilis
  - (f) Tuberculosis
  - (g) Neoplasm
- 3 Physiologic Predisposition
- 4 Occupation
- 5 Fatigue
- 6 Trauma
  - (a) Indirect
  - (b) Direct

Naturally almost the same factors produce tears or ruptures in the lower extremity as in the upper extremity. The exception is the tendon of the long head of

the biceps brachii, which, as a result of its passage through the shoulder joint, is different from any other tendon in the human body. No one will deny that fatigue, or senile or pathologic changes in muscles or tendons predispose toward rupture. Occupation is always a factor in the production of ruptures. Of the greatest interest are the muscle ruptures occurring in healthy young persons, more particularly those ruptures which result from indirect trauma.

### MECHANISM

Although there are a few cases reported of muscles or tendons having ruptured in a flaccid state, in most instances the severance occurs when the muscle is in strong contraction and a group of antagonistic muscles are brought into action. In most instances it occurs when there is a surprise or unexpected movement and a lack of coordination. This will be discussed more in detail on certain muscles. As early as 1882, Madyl<sup>2</sup> in a very comprehensive article analyzed and classified the different mechanical conditions that may cause a muscle to tear, and Brickner<sup>3</sup> has presented this scheme in outline form as follows:

Muscles tear as a result of

I Muscular action

A Flaccid

- 1 Contraction of antagonist
- 2 Passive stretching

B Contracted muscles

- 1 Active contraction
- 2 Contraction of antagonist
- 3 Increase of tearing over cohesive power
- 4 Asynchronous contraction (a) Inner part against outer (as in bifid muscles) (b) Distal part against proximal part
- 5 Additional muscular force of another muscle

II External trauma.

III Spiral twists of limb

IV Degeneration of muscle as in disease and in neurologic conditions

### SITES AND ORDER OF FREQUENCY

Grassheim,<sup>4</sup> working with Professor Limger over a period of five years, collected 500 cases of indirect muscle and tendon tears, he said that he found the site of the lesion to be different from that usually reported. He found that the calf muscles came first in frequency, then the extensors of the leg, the biceps of the arm, the achilles tendon and, last, the extensor of the thumb. Madyl collected sixty-one cases of tears of the quadriceps muscle and fifty-seven of the patellar liga-

<sup>1</sup> From the Department of Surgery, University of California Medical School.

<sup>2</sup> Read before the Surgical Section of the California Medical Association at Pasadena, May 3, 1912, and before the Pacific Northwest Medical Association, Spokane, Wash., June 29, 1912.

<sup>3</sup> Gilcreest, E. L. Rupture of Muscles and Tendons. *J. A. M. A.* 54:11-19 (June 13) 1925. Two Cases of Subcutaneous Rupture of the Long Head of the Biceps Flexor Cubiti. *S. Clin. North America* 6: 539 (May 11) 1926. The Common Syndrome of Rupture, Luxation and Pseudo-Tumor of the Biceps Brachii. An Analysis of Thirty-Three Cases. *Am. J. Surg.* 1927.

<sup>4</sup> Madyl, Karl. Subcutaneous Muscle and Tendon Ruptures. *Deutsche Zeitschrift für Chirurgie* 17: 306, 1882; 18, 1883.

<sup>5</sup> Brickner, W. M. and Milch, Henry. Ruptures of Muscles and Tendons. *Internat. Clinics* 2: 94 (June) 1928.

<sup>6</sup> Grassheim, Kurt. Die Indirekten Muskel- und Sehnenrisse in der Unfallmedizin. *Monatsschrift für Unfallheilkunde* 29: 1922.



ment—in all, 118 cases—and 103 ruptures of muscles in the upper extremity and trunk. When all the cases of back sprains are considered, as well as the so-called cases of lumbago, one must realize that many of these

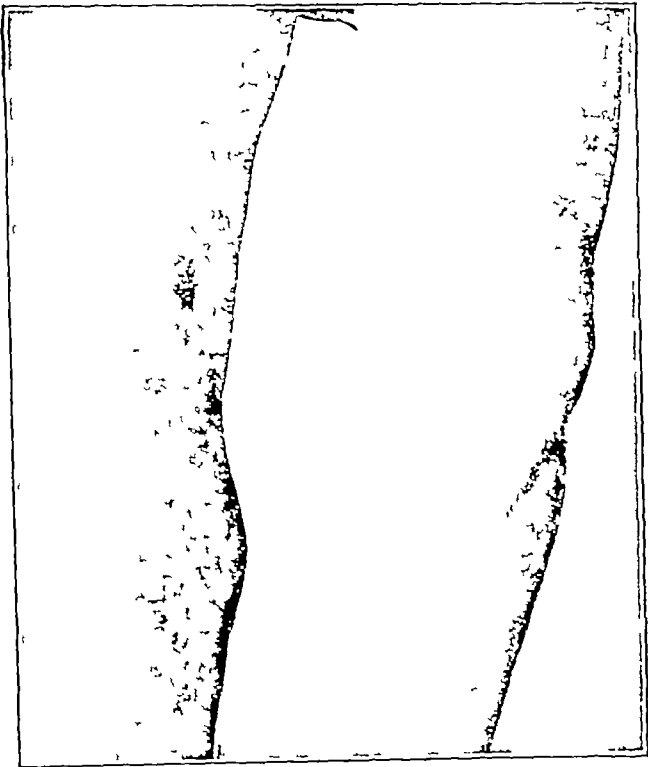


Fig. 1 (case 1)—Partial rupture of the vastus internus muscle.

patients are actually suffering from tears in the deep back muscles or fascia.

RUPTURES INVOLVING THE EXTENSORS OF THE KNEE

Ruptures involving the extensors of the knee are undoubtedly most serious as they concern the entire function of the leg. A few points concerning the anatomy and action of these muscles should be mentioned.

*Anatomy*<sup>5</sup>—The patella is held in place, i. e., from going outward, by two anatomic structures: first, the bony prominence of the external condyle of the femur and, second, the almost horizontal arrangement of the fibers of the vastus internus. If this bony prominence fails to develop, there is a true congenital dislocating patella, a condition first recognized and described by Mr. H. O. Thomas of Liverpool. He corrected this condition by striking the external condyle with a hammer, thus producing a periostitis with resulting bony formation. Sir Arthur Keith mentions it in his book "The Menders of the Maimed." The acquired form of dislocation leading to instability of the knee follows derangement of the vastus internus muscle either by traumatic rupture or by paralysis following anterior poliomyelitis.

*Action*—The vastus internus, the vastus externus and the crural muscles are the extensors of the leg. The isolated contractions of each of the two vasti tend to draw the patella laterally and to dislocate it. Normally the synergistic action of these two vasti counteracts this lateral movement. It is important to note that the total contraction of the external vastus tends to displace the patella posteriorly by effacing the obtuse angle,

opened posteriorly, which the muscle forms with the patellar tendon.<sup>6</sup>

According to Grassheim, four lesions in this region are to be differentiated: a tear in the quadriceps itself, a tear of the tendinous sheath above the patella, a tear of the ligamentum patellae, and a tearing away of the tibial tuberosity, usually occurring in growing young people. Most frequently the tendon tears directly through, above the kneecap.

These lesions are produced in one of two ways. First, a person starts to fall, holds himself straight with difficulty and, at that instant, feels a violent crack in the leg and falls, or, second, he falls on a strongly flexed knee and, as a result of the counter leverage, tears the muscle or tendon and occasionally even fractures the patella.

There is an immediate hemorrhage which involves the knee joint. The patella is found to be abnormally movable and floats. Extension of the leg is either limited or impossible.

If the tear is only partial, conservative measures may be tried, particularly in elderly persons. If the tear is extensive or complete, especially in a young person, surgical repair should be done immediately. Whether the treatment is conservative or surgical, it should be borne in mind that of all the muscles of the human body the quadriceps undergoes the most rapid atrophy. Massage and faradization should be begun at the earliest possible moment in an effort to prevent this disabling condition.

Figure 1 (case 1) shows clearly a partial rupture of the vastus internus. It is interesting to note that the patient complained of considerable aching in the region of the inner aspect of his knee, for which he had received physical therapy for almost a year without



Fig. 2 (case 1)—Same as figure 1 after operation.

appreciable benefit. After the operation he was discharged as cured in four months.

Cases 2, 3 and 4, all complete ruptures of the quadriceps tendon, reveal how disabling such injuries are and how imperative is surgical intervention. Case

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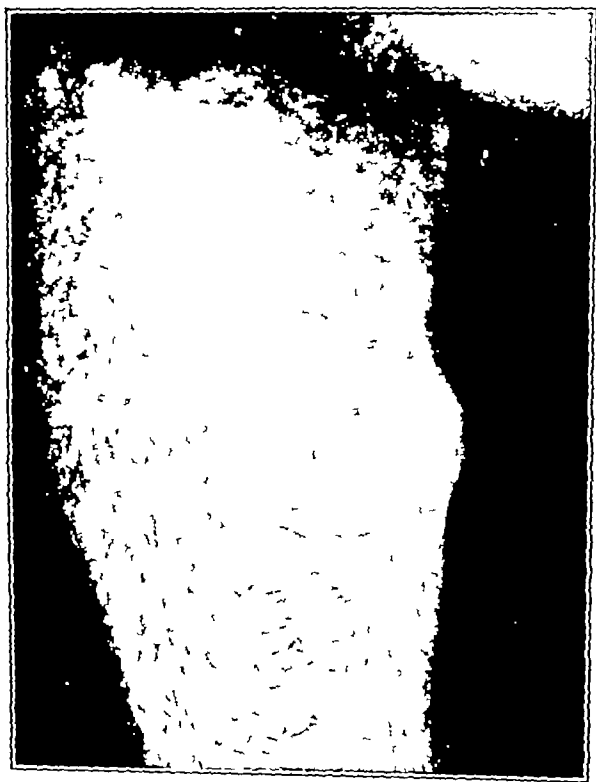


Fig 3 (case 5)—Partial rupture of the rectus femoris and vastus intermedius muscles

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**Rectus Femoris**—This muscle, together with the vastus externus, crureus and vastus internus forms the quadriceps extensor (in quadriceps femoris). The two heads of origin, bound together by a band of fascia, give rise to a single tendon. It is from this tendon that the muscular fibers spring, and it is here, at this tendo-muscular junction, where the tensile strength is doubtless the weakest, that the rupture occurred which is shown in figure 3 (case 5). Although the lesion in this muscle was much higher than that in case 1, this man complained definitely of weakness and aching in the knee. It is these joint symptoms in muscle and tendon tears that often mislead the surgeon, so that he directs his attention and treatment to the knee. In most cases after surgical repair the joint symptoms will subside entirely or at least to a great extent. This man was not operated on as the lure of a money settlement, in this period of financial depression, loomed so large in his estimation that he accepted it instead of an opportunity to have a better limb.

The four elements composing the quadriceps extensor muscle have been discussed. Their ultimate insertion is into the tibia by means of the ligamentum patellae and the lateral ligaments of the patella. It is

evident, therefore, that a rupture of this ligament immediately causes a retraction of the patella upward by means of contraction of the strong muscle group above. Case 6 was one of complete rupture and case 7 of partial rupture of this ligament. Both cases were treated surgically with satisfactory results. Case 8 is also one of partial rupture of the ligamentum patellae as well as of the external ligaments of the right knee.

#### RUPTURES INVOLVING THE FLEXORS OF THE KNEE

**Semitendinosus**—Subcutaneous tears or ruptures of this muscle are very infrequent. Only a few cases have been reported in the literature. This muscle, together with the semimembranosus and gracilis, form the internal hamstring tendons, the biceps cruris, the external hamstring. This group together with the sartorius, gastrocnemius, plantaris and popliteus constitute the flexor group. This group is more powerful in its action than the extensor group. Joint symptoms often arise immediately when one of the powerful and important flexor muscles is torn. Case 9 (fig 4) is an example of this. One of this man's chief complaints was pain in and about the left knee. Although he was an elderly man and in feeble health, a reparative operation afforded him considerable relief and got rid of the conspicuous bulging in the posterior aspect of the thigh.

**Inner Head of Gastrocnemius**—Figures 5 and 6 (case 10) show a rupture of the inner head of the gastrocnemius. The mechanism of the injury is interesting. It will be noted that it was caused by a spiral movement with the foot stationary, the body turning clockwise on the left knee. The patient, as most of the others, complained of pain in his knee joint and unfortunately was treated for a long time by conservative

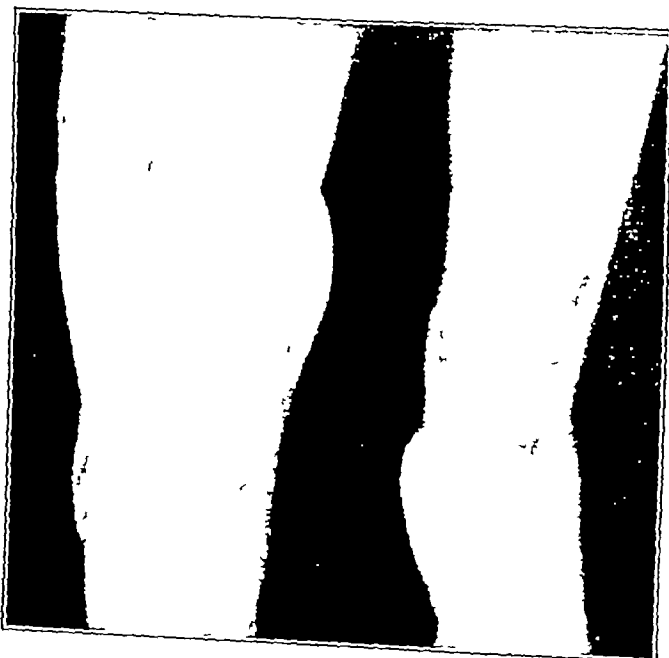


Fig 4 (case 9)—Partial rupture of the semitendinosus and semimembranosus muscles.

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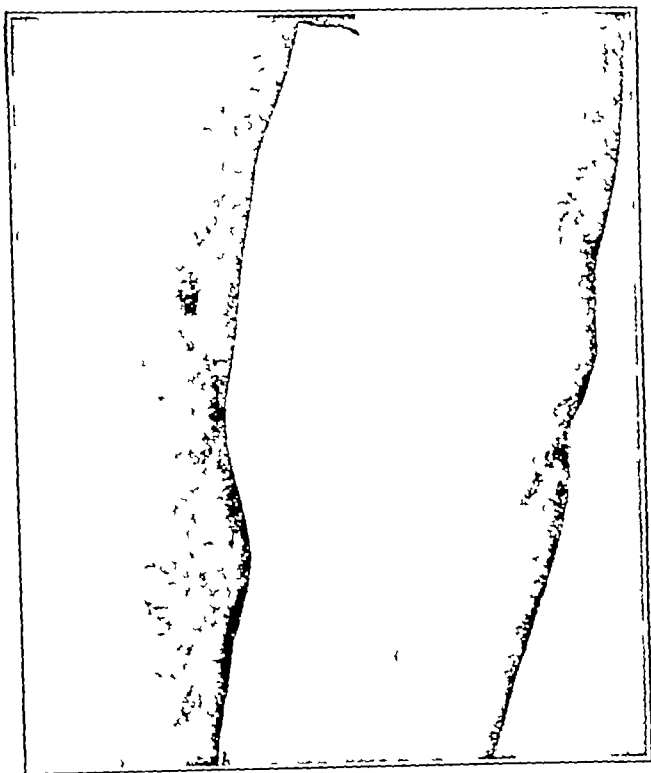


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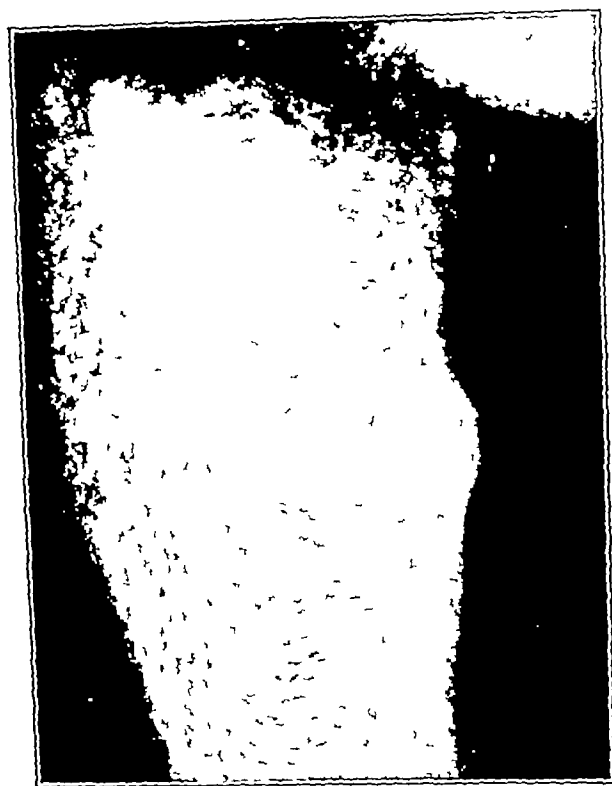


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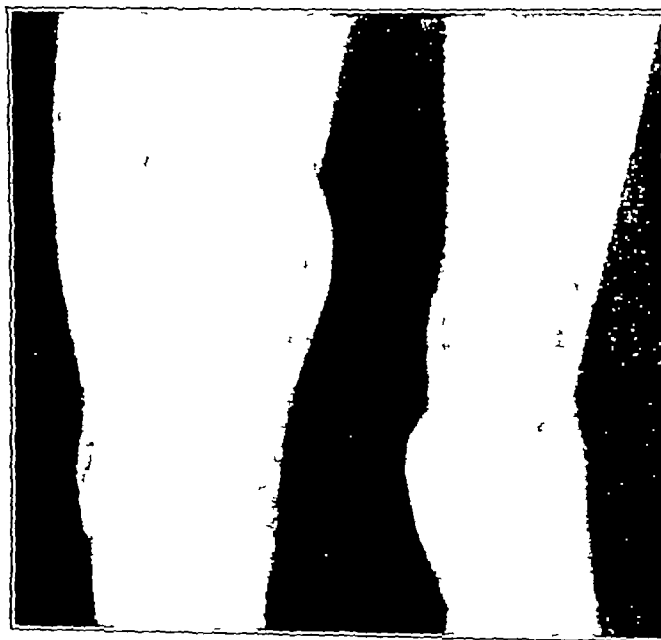


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difficult Case 11 is one of a partial rupture of the inner head of the left gastrocnemius, which was due to almost the identical mechanism as in case 10, that is, a spiral movement of the body with the left foot held stationary. Further details of this injury are given in the report of cases at the end of the article.

#### RUPTURES OF THE CALF MUSCLES

The calf muscles form a group that is "designed for use in walking and to compensate for the greater length



Fig 5 (case 10) —At left partial rupture of the medial head of the left gastrocnemius muscle. The belly of the muscle protrudes even when the leg is relaxed. At right, right leg as comparison. (Figures 5 and 6 were supplied by Drs. Everingham and Hitchcock.)

of the foot anterior to the center of motion at the ankle and its shortness posteriorly. They are superficial and attach below through the tendoachillis to the os calcis."<sup>8</sup>

There is a well recognized condition known as "tennis leg" which is considered usually a rupture or a tear of the plantaris, but according to Brickner the calf muscles themselves also may be involved. According to other authors, "tennis leg" includes tears even of the achilles tendon.

The history of these cases is typical. It seems that at the time the player springs or attempts to spring, or suddenly turns the body with legs held straight, he produces a sort of spiral twist of the muscles. Tennis players feel a surprising, sudden pain in the calf, as though hit by a stone, and fall to the ground. Momentarily they are of the impression that they were hit by a stone. They think that the fall ruptured the muscle, but the rupture was primary.

**Plantaris (case 12)** —I had an opportunity to see recently, only a few moments after it occurred, what I believe to have been a rupture of the plantaris in a man who sustained this lesion on his way to my office. He was convalescing from a fracture of the left patella for which I had operated on him several months before. The mechanism of this second injury was as follows. He was standing on the curb waiting for a street car. When the street car approached, he stepped from the curb with his good foot and as soon as it reached the ground, and his weight was supported by his toes in the foot movement of the step forward, he felt a sharp pain in his right calf and fell to the ground. Further details are given in the history of his case.

#### RUPTURES OF THE ACHILLES TENDON

**Mechanism** —A sudden strain on the tendon as in forceful and forced dorsiflexion of the foot may cause a (more or less complete) rupture of the tendon. Infections occasionally, especially syphilis, may undermine the resistance of the tendon. Age and overweight seem to be more important factors in producing this lesion than elsewhere in the body. Both of these conditions diminish the normal resilience of the tendon.

**Occupation** —This plays a prominent part, as it occurs not infrequently in boxers, mountain climbers, baseball or tennis players and occasionally dancers. Cases are well known in boxers trying to dodge a blow by shifting their body backward and jumping on their toes with knees bent, so that the tendon is much stretched, in persons who slip, begin to fall, and try to keep their balance by bending their knees and raising their heels, and in mountain climbers.

**Treatment** —Incomplete tears respond favorably and quickly to conservative measures. The ankle joint should be held in semiplantar flexion so that the tendon is placed at rest. Elevation of the heel for a short time will afford relief and make walking less uncomfortable. Under no condition should a tight bandage be placed round the heel cord. This has been emphasized by Oppenheimer,<sup>9</sup> who reported a case of vicious union of the ruptured tendon to the posterior part of the capsule of the ankle joint and to the posterior surface of the lower third of the tibia following the application of a tight adhesive dressing. Complete rupture should be repaired surgically.

Case 13 is that of a girl, who, while leaping into the air with one leg, had suddenly shifted all her weight on the toes of the other foot and, as a result, ruptured the achilles tendon.

Case 14 is that of a man whose tendon was ruptured when his right foot became tangled in the rungs of a

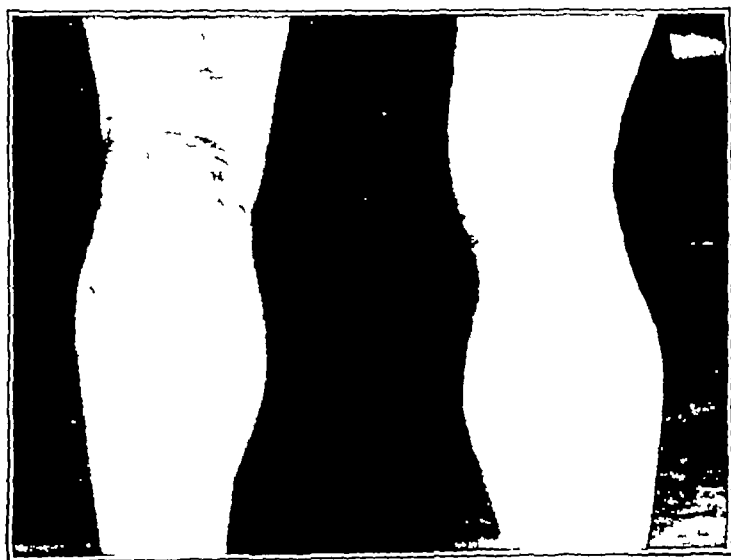


Fig 6 (case 10) —Same as figure 5 after operation

ladder from which he had fallen, so that the foot was violently and forcibly dorsiflexed. The violence that produced this rupture was such that the tendon was found to be very much shredded, as if the force that tore it (in this case the weight of the body hanging from the ladder), instead of acting suddenly, acted forcibly and for a long period.

<sup>8</sup> Davis, G. G. Applied Anatomy, ed. 4, Philadelphia, J. B. Lippincott Company, 1916, p. 548.

<sup>9</sup> Oppenheimer, E. D. Spontaneous Rupture of Achilles Tendon with Vicious Healing to Tibia and Ankle Joint, J. A. M. A. 84: 749 (March 7) 1925.

Case 15 is another classic case of rupture of the achilles tendon when the foot is suddenly brought into extreme and powerful dorsiflexion, which occurs rather frequently in baseball players

## SUMMARY

1 Partial or complete ruptures (tears) of the muscles and tendons of the leg occur more often than is supposed generally

2 An early diagnosis should be made if possible. Joint symptoms, particularly in the knee, should not mislead one in the diagnosis

3 Early surgical repair in extensive or complete tears saves much time and gives a much better ultimate result

4 The prognosis usually is good if proper treatment is given early

## REPORT OF CASES

**CASE 1—History**—B M, a man, aged 50, was injured, Oct. 1, 1926, while riding a horse. His mount slipped and fell, and the patient's leg was caught under the horse, causing agonizing pain. Instantly the thigh became greatly swollen. He was able to hobble, with the aid of a stick, for a distance of about 1,200 feet. For the next two weeks he stayed in bed and received "home treatment," consisting of iodine, hot water and liniment. Most of the inside of his leg turned blue. He then consulted a physician, who prescribed hot applications alcohol and liniment.

At that time his chief complaint was soreness just above and toward the inner surface of the right knee and just above the knee on the flexor surface. During this time much of the soreness on the back of the knee had ceased, and he stated that the soreness on the inner side had continued unabated. He received physical therapy for about nine weeks. After that he gave himself treatments at home with hot towels and rubbing three times a day for ten days but discontinued them as he could see no improvement. He stated that this soreness made his leg weak and that while walking his leg "caught" just above and to the inner surface of the knee. He described this "catch" as a feeling comparable to a knee locking from a slipping cartilage.

**Examination**—Sept 8, 1927, there was slight atrophy of the muscles of the right thigh. About 7 cm from the knee joint there was a conspicuous concavity instead of the normal convexity. Pressure over this concavity revealed little resistance, the patient said that the soreness was at that point.

The diagnosis was partial severance of the vastus internus muscle.

**Operation and Result**—Sept 13, under local anesthesia, a curved incision was made over the lower and inner aspect of the right thigh. The fascia and muscles were found to be densely adherent. All the underlying tissues were dissected and no evidence of the sartorius muscle was found. The concavity was caused by a partial severance of the muscles of the inner and lower aspect of the thigh, i.e., the vastus internus, gracilis and semimembranosus. The two latter muscles were lifted up and sutured to the vastus internus. The fascia over these muscles was pliated to double thickness for a distance of 3 or 4 inches. The skin and subcutaneous tissue were closed. The cosmetic result was perfect and the concavity was obliterated entirely. By January, 1928 the patient said that as far as he could tell, his leg was perfectly well. Examination revealed that his leg had filled out and the muscles appeared to have good tone. He walked well without a cane.

**CASE 2<sup>10</sup>—History**—S E, a boy aged 16 years was injured first about April 1 1927. While playing football, the patient was struck above the knee and two weeks later he was hit again in the same place. June 13, 1929, he fell down stairs and injured his knee.

The chief complaints were (1) limitation of flexion since the first injury, (2) limitation of motion in the left knee, and (3) swelling in the left thigh.

**Examination**—On the left thigh, 4 inches above the knee, there was a firm mass, the size of an orange, deep under the muscle, held in position by the surrounding muscles. The knee could be flexed 20 degrees. The left patella was larger than the right. There was some fluctuation about the patella and in the joint.

The diagnosis was (1) rupture of the left quadriceps muscle, (2) fracture of the left patella, and (3) calcified submuscular hematoma of the left thigh.

**Operation and Result**—July 10, 1929, operation disclosed a complete separation of the tendon from the upper border of the patella, with slight fracture of the patella and a small fragment of bone contained in the tendon laterally. Much old blood was removed from the quadriceps pouch. The patella and infrapatellar tendon were freed somewhat to allow for some traction upward. Drill holes were placed through the patella, and a mattress suture of heavy braided silk was put through the drill holes and the quadriceps tendon. The remainder of the tendon repair was made with figure of 8 sutures of number 2 chromic catgut.

The outer surface of the thigh at the junction of the middle and the lower third was exposed through the fascia lata. Honeycomb bone, superficial to periosteum and contained in a thin membrane, was removed. The area of periosteum left scarred was covered with a piece of fascia lata taken from the thigh and sutured to the periosteum with number 2 chromic catgut. The usual closure was made by layers. Dry dressings were applied. A Thomas splint was applied with the leg in extension.

The patient made an uneventful and satisfactory recovery.

**CASE 3<sup>10</sup>—History**—C C, a youth, aged 18, twisted his right knee in November, 1926, while playing football. On the advice of a physician he remained in bed for several weeks. After he got up he fell down stairs and "tore the ligaments" of the same knee. Following this, he had considerable pain and swelling of this knee (more so than when injured previously) and was able to bend the knee only with difficulty. He was kept in bed for several weeks and hot epsom salt compresses were applied. After that time, though he had moderate pain, he limped about with the aid of a cane. Several times he twisted and strained his leg again and had to stay in bed. In December, 1927, the knee became more painful.

The diagnosis was traumatic rupture of the right quadriceps tendon of one year's duration.

**Operation and Result**—Jan. 10, 1928, an incision 20 cm long was made over the lower anterior portion of the femur. The tendon of the quadriceps was sutured to the patella with heavy kangaroo tendon to approximate the tendon to the patella and to permit sutures of number 2 chromic catgut to be applied. The kangaroo tendon then was taken away. A cast was applied to the leg in extension.

The patient made a good recovery from the operation and was much improved.

**CASE 4<sup>10</sup>—History**—R S, a woman, aged 35, while bending over, Aug 6, 1926, felt a pain in her right knee and thought she had sprained it. A physician applied a splint for one month and then reapplied it for three weeks more.

**Examination**—The patient was unable to extend her right leg, although she could flex it readily. Her leg was weak, and she limped. When walking, she threw her foot upward from the hip.

The diagnosis was rupture of the right quadriceps femoris tendon.

**Operation and Result**—October 17 a transplantation of the right biceps femoris tendon into the patella was done, since the tendon of the quadriceps was so frayed that suture was impossible. The skin was then dissected back on the lateral side to the biceps muscle. This was freed from its attachment, brought up through an opening in the fascia lata, and sutured with heavy braided silk to the tendon of the patella.

The patient made an uneventful recovery from the operation and secured a satisfactory result.

**CASE 5—History**—D A J, a man, aged 38, was injured, Dec. 15, 1930 while working as a mucker. His left thigh was crushed between a car and the pipe, which extended along the

<sup>10</sup> The author is indebted to Dr. Howard H. Markel for the report of this case.



side of the tunnel, the force was sufficient to bend the blade of a knife which he had in his pocket. There was some improvement after the injury, but his recovery was not complete. He complained of (1) tenderness, sensitiveness and numbness over the upper front part of the thigh, (2) weakness of the left thigh and knee after walking for a distance (the weakness of the knee was especially evident in climbing), (3) cracking sounds in the left knee when bending it as in walking upstairs or uphill, (4) a feeling of tightness in the muscles of the left thigh and above the knee, (5) heaviness of the entire left limb, which he described as "feeling old," and (6) a disturbance of the circulation in the leg, which had produced a swelling of the veins of the ankle and foot.

*Examination*—Oct 28, 1931, there was a marked venous circulation of both lower limbs, with three or four small healed ulcers the size of a dime (18 mm), a result of chickenpox, over the internal lower aspect of the left leg and the outer aspect of the left foot. Dilatation of the superficial veins of the lower third of the left leg, ankle and dorsum of the foot was evident.

At the upper anterior third of the left thigh was seen a marked bulging, almost the size of a hen's egg, which became more evident when the anterior thigh muscles were brought into action, such as, for example, when the patient stood erect and contracted this anterior group of muscles or when the thigh was brought up into complete abduction. There was a conspicuous depression above this bulging corresponding to a definite gap of the underlying anterior rectus muscle and femoral aponeurosis. This depression was tender to pressure.

There was apparent atrophy of disuse of the left thigh, which was confirmed by measurement. There was slight fine crepitus in the right knee and coarse crepitus in the left knee. There was a slight swelling of the posterior aspect of the left ankle.

From the history and examination in this case it seemed evident that he received a severe crushing injury to the upper anterior third of the left thigh, followed immediately by the formation of an extensive hematoma beneath the left anterior muscle planes. This resulted in a partial rupture of the rectus femoris muscle and a small portion of the vastus intermedius muscle. In addition, he had traumatic phlebitis of the long saphenous vein. Subsequently fibrosis in the region of the crushed area occurred, resulting in a tender scar which, on contracture, lessened the elasticity of the portion of the muscle that was crushed. This in turn accounts largely for the partial limitation of flexion of the knee.

The patient declined an operation and requested a settlement from the insurance company.

*CASE 6<sup>10</sup>—History*—W. L. T., a man, aged 39, disabled, May 25, 1923, felt a sudden, severe pain in the left knee as he began to jump. His jump ended in a collapse, with his left knee flexed under him. After the usual course of splinting and massage for two weeks, he noticed that his kneecap appeared to be displaced above its usual position.

*Examination*—The patient could not extend his left leg below the knee. The left patella was displaced upward about 1½ inches. The quadriceps muscle was much more flabby than that of the other leg. There was no tenderness or swelling.

The diagnosis was rupture of the left patellar ligament.

*Operation and Result*—The ligamentum patellae was ruptured obliquely about 1 inch above its insertion, June 15. The patella was pulled down, and the ruptured ligament was sutured.

The patient made a good recovery and was much benefited.

*CASE 7<sup>10</sup>—History*—Miss E. C., aged 22, seen, Oct 18, 1930, had had acute poliomyelitis when 18 months of age, and at that time she dislocated her left hip by falling. She had had several operations: a reduction of the hip in 1925, a triple arthrodesis of the left foot in 1927, osteotomy of the right tibia, and tenotomy of the extensor tendon of the right small toe. She had also had a transplantation of the inner flexors of the thigh. After all this surgery she was able to walk about with a brace and cane. About Oct 8, 1930, she fell on her right knee and thereafter was unable to walk so well as before.

*Examination*—There was almost complete paralysis of the left leg and foot. However, she had a slight ability to flex her leg or her thigh because of the transplanted internal flexors and to rotate the leg externally. There was palpable separation of the patellar ligament from the patella. There was lateral bowing of the right tibia but the alignment was good, the foot showed marked talipes cavus and the toes were in a claw position.

The diagnosis was (1) partial rupture of the ligamentum patellae, and (2) residual poliomyelitis.

*Operation and Result*—October 25, a curved incision 8 cm in length was made over the lateral surface of the leg, extending from the patella to the tibial tuberosity. The ligamentum patellae was not ruptured but was very thin and was stretched so that only a few fibers held it in position. With medium braided silk the ligament was plicated and held in the stretched position toward the tuberosity. The suture apparently held firmly. The wound was closed. Dry dressings were used and a cast was applied with the leg extended.

The patient's course was uneventful, and she was able to walk as well as before the accident.

*CASE 8<sup>11</sup>—History*—Mrs. M. E., aged 32, struck both her knees forcibly in January, 1932. As a result of the accident her knees became swollen, and she was confined to bed for several weeks, since that time she had been unable to work on account of the following complaints: (1) weakness of the right lower extremity, which made it necessary, when climbing stairs, to grasp the quadriceps group just above her knee, (2) pain in the external side of the right thigh, extending from 4 cm above the patella almost to the level of the great trochanter whenever she stood, walked or climbed stairs.

*Examination*—There was a slight puffiness in the region of the patellar tendon and slight tenderness on pressure over the attachment of the tendon to the patella, with a definite palpable indentation of the tendon in this area. This indentation was more apparent on contraction of the quadriceps muscle. When in the erect position, bending her knees to an angle of about 45 degrees elicited a very definite crackling and tearing sound, and a creaking sensation was felt by the palpating hand over the patella. When sitting with her knees hanging over the edge of the table, extension of the right knee to more than 45 degrees was impossible unless she held the quadriceps group. There was marked lateral internal and upward mobility of the right patella as compared to the left. The roentgen examination was negative.

The diagnosis was traumatic partial severance of the ligamentum patellae and the external ligaments of the patella.

Surgical intervention was advised if improvement did not occur, but she made a 50 per cent improvement within a few weeks of this examination.

*CASE 9—History*—E. G. A., a man, aged 59, was injured, Jan 19, 1929, when he lifted some heavy timber and slipped, striking his left thigh posteriorly. Soon afterward he noticed that when he stood his left knee became very tired and that this leg would not support him unless he held it perfectly straight. After two hours the back of the thigh and knee pained him so severely that he was unable to work. As the pain increased in severity he went to see a physician, who had treated him ever since. At the time of examination his complaints were (1) aching in the back and inner surfaces of the lower third of the left thigh after standing for some time, (2) pain in the left knee if the leg remained in one position, (3) pain on both sides of the left knee cap at each step, (4) pain in the popliteal space when the knee was flexed, which radiated upward and (5) pain in the lower posterior third of the left thigh, when the left leg was crossed over the right knee.

*Examination*—February 20, with the patient standing in a normal position, nothing was seen except a slight ecchymosis and dilatation of the superficial capillaries. There was no difference in the circumference of the legs. When the muscles of the thigh were flexed or contracted a protrusion of muscular tissue 15 cm long and 3 cm wide on the posterior and inner aspects of the lower third of the left thigh was seen.

<sup>11</sup> This case was referred to the author by Dr. James M. Marshall of San Luis Obispo.

The diagnosis was partial rupture of the semitendinosus and semimembranosus muscles, or their sheaths, permitting herniation

**Operation and Result**—February 27, under local anesthesia, a linear incision 17 cm long was made over the course of the semitendinosus muscle, and the muscle was exposed. The semitendinosus, the semimembranosus and the gracilis muscles were dissected above and below to their tendinous sheaths. The only muscle found to be relaxed was the semitendinosus. At each voluntary contraction of the muscle, it bulged almost to the size of a hen's egg. It was evident that the injury to this muscle was the cause of the trouble.

The muscle was repaired by shortening the muscle fibers by a continuous in-and-out mattress suture, this suture then was carried up to the tendinous sheath, which also was shortened. After this procedure, contraction of the muscles no longer produced the bulging seen previously. The fascia was plicated in order to fortify this area still more. The wound was closed by interrupted sutures.

Following operation, the patient gained a great deal of strength in his leg and walked without the aid of a cane. He was able to bear the weight of his body on this leg and to climb stairs well.

**CASE 10<sup>12</sup>—History**—M. M., a man, aged 38, was injured, Oct. 31, 1930, when he fell about 3 feet while carrying a weight of 105 pounds on his shoulder. He landed on his left foot, his body turned clockwise on his left knee, and his foot fixed, causing a twisting of his knee. He said that he felt sort of a "squashing" sensation in his knee at the time, and that, after arriving home that evening, he had considerable pain in the back of his knee. At the time of examination the pain was mostly in the back of his knee at the inner side of the popliteal space, radiating through to the front of the knee at the inner side of the patella. In addition, he said that when he bent his knee it felt as though something were tearing at the back of it and, if he sat for a time, his knee stiffened considerably. After his injury, hot tub baths were used until November 3, after that he wore a plaster-of-paris cast for a month. In addition, he had diathermy treatments. In July, 1931 his knee was operated on for a bursa under the semitendinosus muscle.

**Examination**—August 17 there was some atrophy of the muscles of the left thigh, which was about one-half inch smaller than the right. There was no swelling of the left knee, no thickening in the lining, no free fluid in the joint and no abnormal instability. The range of motion was normal.

In the back of the left knee, over the internal hamstring group, was a scar about 4 inches long, which was well healed and freely movable. Standing on his toes, bending his knees and rising again caused pain over the inner origin of the gastrocnemius muscle. When the patient lay on his face with his knee flexed at a right angle, attempts to flex it against resistance to more than a right angle caused pain in the same area.

Both feet were pronated considerably when the patient stood, the left more than the right. The patient used a cane, though he was able to walk perfectly well without it.

Röntgenograms of the knee joint, taken from many angles, did not reveal any definite evidence of bony pathologic changes.

The diagnosis was partial rupture of the medial head of the left gastrocnemius muscle.

**Operation and Result**—December 14, under spinal anesthesia with the patient lying on his face, an incision about 10 inches long was made over the popliteal space just lateral to the semimembranosus muscle. This was carried through the deep fascia and by gross dissection the semimembranosus and semitendinosus muscles were retracted inward. The nerve and large vessels found in the popliteal space were retracted laterally. Particular care was taken not to cut the nerve of the inner head of the gastrocnemius muscle. One small filament was seen going to the most proximal portion of this head but not the large bunch of nerves which should enter the inner head of the gastrocnemius. The insertion to the proximal portion of the muscle was exposed. It was a very thin tendinous insertion

about 1½ inches long, with no muscle fibers running up to the femur. Distal to this tendinous insertion, the muscle bulged down very markedly, especially on the lateral side of the inner head. It seems likely that a large portion of the muscle had been pulled loose from the tendon of insertion and that this accounted for the changes noted.

Two heavy black silk mattress sutures were passed through this bulging portion of muscle, which was carried up to the tendon of insertion and sutured there. The deep fascia and subcutaneous tissues were then closed with plain number 1 catgut, and the skin was sutured with interrupted dermal A pillow splint was applied with the leg in semiflexion.

The postoperative diagnosis was an old injury to the inner head of the gastrocnemius muscle.

The patient has made great improvement and is still under treatment.

**CASE 11—History**—M. A., a man, aged 24, was injured while lifting a 300 pound block of ice over the edge of a truck, it caught and began to tilt and slide to the left. To prevent it from falling on his feet, he had to use all his strength and put all his weight on his left leg. His foot was held stationary and his left thigh was prevented from rotating and tilting outward by the prolonged, forceful contraction of his internal calf muscles, thus producing a sudden, spiral, clockwise movement of his left thigh over the knee, leg and foot. But the contraction of the muscles of the leg was incoordinated and unbalanced and thus tore the muscle where the tension was the greatest, i. e., on the inner head. As a result of this muscular effort in balancing his body and the block of ice, he felt a dull pain in his left calf. This did not prevent his working for about a week, but at the end of that time, as his leg began to pain him more and more, he had to cease.

**Examination**—There was a slight atrophy of disuse of the internal aspect of the left calf, and the muscular contour was less pronounced than on the right side. Circumferential measurements of the calf were 1 cm less on the left as compared to the right. On palpation there was a decrease in the tonicity of the muscles of the left calf. On weight bearing and on standing on his toes, palpation revealed a difference between the external head of the left gastrocnemius, which became hard under contraction and the internal head, which remained softer and in which there was a suggestion of a sulcus deep into the muscular mass.

The diagnosis was partial rupture of the muscular head of the left internal gastrocnemius.

**Treatment**—The patient was improving at the time he was examined. He was treated conservatively.

**CASE 12—History**—J. B., a man, aged 50, was convalescing from an open reduction of a fracture of the left patella. As he stepped from the curb with his right foot, and his weight was supported by his toes in the foot movement of the step forward he felt a sharp pain in his right calf and fell to the ground. After he sat on the curb for ten or fifteen minutes, the pain subsided somewhat and he was able to come to my office.

**Examination**—There was an extensive ecchymosis of the right leg, posteriorly, and marked edema in the calf region with much tenderness on pressure along the course of the plantaris muscle and pain on the plantar flexion of the foot against resistance.

The diagnosis was a tear of the plantaris muscle.

**Treatment and Result**—The treatment was massage, a supporting bandage and moderate exercise. The patient recovered in from ten to fourteen days.

**CASE 13<sup>10</sup>—History**—Miss E. P., aged 28 while dancing and leaping in the air for height felt something snap in the back of her left leg. This accident occurred in March, 1927. She was unable to bear her weight on the left leg.

**Examination**—A loss of tension of the left achilles tendon with muscular retraction was found.

**Operation and Result**—April 5, a rupture was found at the musculotendinous junction some tendon being left above. A tenoplasty was done a free graft of the achilles tendon being used to bridge the gap.

A good result was achieved.

<sup>12</sup> The author is indebted to Drs. Everingham and Huchcock for the report of this case.

CASE 14<sup>13</sup>—*History*—G R M, a man, aged 30, fell from a ladder a distance of 12 feet, striking on the point of his right elbow His right foot was entangled in the rungs of the ladder and was forcibly dorsiflexed by its weight He was unable to extend his right foot and also suffered pain in and deformity of his right elbow

*Examination*—June 28, 1931, he was able to walk without much discomfort There was an indentation about 1 inch above the os calcis, and he was unable to extend his foot There were swelling, pain and deformity of the right elbow

The diagnosis was (1) rupture of the right achilles tendon and (2) comminuted fracture of the head of the right radius

*Operation*—June 29, a reduction of the fracture of the right radius was done, in addition, the achilles tendon was sutured and a fascial transplant was done An incision was made along the medial surface of the achilles tendon and was carried to the tendon, which was found to be completely ruptured and very badly shredded Long strings of tendon could be pulled from within the muscle and from the tendon attached to the os calcis The plantaris tendon was intact By steady traction on the gastrocnemius and by placing the foot in an equinus position, the tendon was brought together rather easily The incision was carried high to obtain a long suture of plantar tendon for use in the repair A strip about 8 inches in length was secured This was left in place at its attachment to the os calcis, and the proximal end was looped into a large-eyed needle It was woven in and out of the two shredded ends of the tendon at its anterior surface Another long shred of tendon was used in like manner, but because of its large size it was impossible to attach it to the needle, stabs were made through the tendon and the suture was drawn in and out This held the anterior half of the tendon firmly A stab wound was then made on the lateral surface of the thigh just above the knee and, with the Whitman fascia apparatus, two long strands of fascia lata were removed for suture material This was accomplished easily and without hemorrhage Stab wounds were made and the fascia lata suture was braided in and out to hold the two fragmented tendons together This made a thick, heavy rope of tendon about one-half inch in diameter, which appeared to be able to withstand a good deal of force All of these were held by interrupted fine black silk sutures The sheath of the muscle was drawn over the tendon and was sutured into place The subcutaneous tissue was closed with buried, plain catgut and interrupted sutures, and the skin was closed with black silk The stab wound and the thigh were treated in a like manner Dry dressings were placed, and a cast was applied with the foot in the equinus position

The patient's postoperative course was uneventful, and his condition was much improved

CASE 15<sup>14</sup>—*History*—A P, a man, aged 35, was injured June 12, 1926 When running, he stepped into a hole and fell forward His toes were on the edge and his heel went into the hole, so that his foot went into extreme dorsiflexion He was unable to walk or to balance himself when he attempted to lean slightly forward

*Examination*—The achilles tendon was lax and tender about 3 cm above the inner malleolus The calf was tender to palpation as far up as the knee The medial surface showed slight ecchymosis The patient was unable to bring his foot into dorsiflexion on account of pain, or to bring it into plantar flexion on account of the ruptured achilles tendon

The diagnosis was rupture of the achilles tendon 5 cm above the os calcis

*Operation and Result*—Clots were found in the tendon sheaths and were removed June 20 The ends of the tendon were sutured with medium braided silk Dry dressings were used, and a cast was applied with the foot in the equinovarus position with the knee slightly flexed

The course after operation was uneventful and the patient's condition was much improved

Fitzhugh Building

13 The author is indebted to Dr LeRoy Abbott for the report of this case  
14 The author is indebted to Dr Wallace Terry for the report of this case

RELATION OF PHYSICAL CHARACTERISTICS TO SUSCEPTIBILITY TO ANTERIOR POLIOMYELITIS

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In view of various opinions as to a possible relationship existing between physical characteristics of an individual and susceptibility to anterior poliomyelitis, the following study was undertaken during the month of April, 1932

Fifty-two children, all of whom had been paralyzed during the epidemic of 1931 in New York City, were studied from an anthroposcopic point of view The factors taken into consideration were the separation of the teeth, the presence of lunulae at the base of the finger nails, the color of the individual, the presence of pigmented spots, the shape of the aperture of the eyes, the development of the male genitalia, and the general build of the individual These factors were chosen

TABLE 1—Lunulae in Fifty Children Taken at Random From Each Age Group

Lunulae	Age In Years							
	3	4	5	6	7	8	9	10
None	29 (55%)	13 (26%)	3 (6%)	0	0	0	0	0
1-5	19 (35%)	34 (68%)	37 (77%)	33 (66%)	26 (52%)	22 (44%)	21 (42%)	10 (20%)
6-10	2 (4%)	3 (6%)	10 (20%)	17 (34%)	24 (48%)	28 (56%)	29 (58%)	40 (80%)

since they were made the anthroposcopic basis of the study recently reported by Draper<sup>1</sup> on the same subject

In order to make the results as accurate as possible, an equal number of controls was obtained These controls were not chosen at random, as it became very evident that it was impossible to match a Norwegian child against a Spanish child, since racial characteristics differ so markedly Therefore, children of similar racial groups were matched

It was also found necessary that children of equal age be obtained as controls, since it was noted that younger children still having deciduous teeth were far more apt to have a separation than children of an older group already having permanent teeth

Another definite age relationship is the lunulae of the finger nails, for it is a definite fact that here, too, the younger the child the less likely is he to have lunulae Table 1, taken as the result of a study on children of the City and Country School in New York City shows this clearly

The paralyzed patients were therefore listed as to age and race, and a control of similar age and race who had lived in New York City during the epidemic of 1931, was matched with each patient The average age of both the poliomyelitis children and the controls was 4.5 years In every instance the opinion is a joint one of the three authors, or the opinion of one or more of the authors and the resident physician at the hospital

From the Bureau of Laboratories, Department of Health  
1 Draper George The Nature of the Human Factor in Infantile Paralysis Am J M Sc 184 111 (July) 1932

visited<sup>2</sup> As was mentioned previously, all paralyzed cases included in this study were taken from the epidemic of 1931

#### RESULTS OF STUDY

For the sake of explanation, the factors studied will be considered separately

1 *Separation of Teeth*—Under this category the cases were grouped as to the separation of the upper incisor teeth by a definite cleft Equalization of age

TABLE 2—*Separation of Teeth*

	Poliomyelitis Cases	Controls
Teeth separated	10 (36%)	24 (46%)
Teeth together	29	25
No teeth	4	3

groups between the paralyzed cases and the controls is of particular importance when this factor is considered, since the deciduous teeth are frequently separated while the permanent teeth are much less so The results obtained are shown in table 2 We lay no particular emphasis on the moderate differences in percentage noted in the table, as it is probably within the limits of chance

TABLE 3—*Lunulae*

	Poliomyelitis Cases	Controls
Lunulae		
None	23 (44%)	25 (48%)
Very few	22	20
Present (3 or more present on each hand)	7	7

2 *Lunulae*—In the consideration of this factor, also, age is a very important quantity The table shown previously of the figures obtained on a study of children at the City and Country School bear this out We conclude from the results in table 3 that there is no important difference in the presence of lunulae when equal age groups are compared

TABLE 4—*Color*

	Poliomyelitis Cases	Controls
Blonde	32	23
Brunette	18 (34%)	27 (52%)
Negro	2	2

3 *Color*—In our series of cases, when children of like racial groups were compared, the results are those shown in table 4 Although there is a rather decided difference between the two groups, we are inclined to place this also within the limits of chance. It may be noted that the results are opposite to those obtained by Draper

TABLE 5—*Pigmented Spots*

	Poliomyelitis Cases*	Controls
None	17	16
Few	2	28
Moderate number	7	3
Many	1	1
Negros	2	2

4 *Pigmented Spots*—Here again, age is a rather important factor since children under the age of 2

<sup>2</sup> We are indebted to the professional staffs of Bellevue Hospital, New York Orthopedic Hospital, Hospital for the Ruptured and Crippled, Fifth Avenue Hospital, New York Nursery and Child's Hospital, and St. Mary's Hospital for Children for their kindness and cooperation in this investigation

seldom present as numerous nevi as do older children Apparently there was very little difference between the groups in number of nevi when children of similar age and race were compared

There was no noted difference between the number of freckled children in the two groups

5 *Mongoloid Eyes*—This refers to the shape of the palpebral fissure with a downward and inward slant We conclude that there is no appreciable difference in the frequency of this characteristic when cases of similar racial groups are compared

6 *Epicanthal Folds*—While here again our results gave no outstanding differences between the two groups, we are omitting our figures, since the question arose as to whether our standards and those of Draper were similar

In this instance, also, age and race are important factors

May, in his book "Diseases of the Eye," says "In slight degree it is often seen in young children associated with a flattened bridge of the nose, and often disappears with the development of the face"

7 *Overbite*—Definite overbite was shown in 66 per cent of the poliomyelitis cases as against 62 per cent of the controls No decided difference was noted in the alignment of teeth in the two groups

TABLE 6—*Mongoloid Eyes\**

	Poliomyelitis Cases	Controls
Mongoloid eyes		
0	35	83
±	10	5
+	7	14

\* Certain cases in which the condition though present is nevertheless slight are graded ±

8 *Genitalia*—In none of the 104 cases studied was any abnormality of the genitalia present, such as cryptorchidism and maldevelopment

9 *Bodily Type*—In none of the 104 cases studied was there any tendency to the status lymphaticus type We were told, however, that a child of this type had been discharged from the New York Orthopedic Hospital one week prior to our visit Nineteen per cent of the poliomyelitis cases showed a degree of adiposity as against 13 per cent of the controls It has been suggested that this difference may be due in some degree to the immobility of the paralyzed children

#### COMMENT

The results obtained in the foregoing study do not correlate with those reported by Draper The differences may possibly be due to the careful manner used in matching controls, as to both age and race of the children studied

The mean age of the patients herein reported was 4.5 years, whereas in the cases reported by Draper the mean age was 9 years It may be noted that the average age of children affected by poliomyelitis during the epidemic of 1931 was 6 years

#### SUMMARY

1 A series of fifty-two children paralyzed by anterior poliomyelitis in the epidemic of 1931 and fifty-two controls living in New York at the same time have been studied from an anthroposcopic point of view

2 All poliomyelitis patients were matched by controls of similar age and race

3 No outstanding differences between the groups were noted in a study of the following factors separation of teeth, overbite, alinement of teeth, lunulae, color, pigmented spots, mongoloid eyes, epicanthal folds, genitalia, and bodily type

CONCLUSION

The anthroposcopic study of fifty-two children paralyzed by anterior poliomyelitis during the epidemic of 1931, and fifty-two controls who lived in New York during the same epidemic brings forth no evidence of the relation of physical characteristics to susceptibility to anterior poliomyelitis

Foot of East Sixteenth Street

AN UNUSUAL DISEASE OF THE BONE MARROW (OSSEOMYELODYSPLASIA)

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AND  
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The clinical and anatomic characteristics of the disease of the bone marrow (osseomyelodysplasia) in a white boy, aged 7 years, to be described herein are of interest chiefly because we have been unable to correlate it with any of the distinctive bone marrow diseases. Myeloma, at first glance, seems to be the group that might possibly include our case because of the marked destruction of bone and the wide dissemination of the bone marrow alterations. Yet, as will be noted from its characteristics, this disease differs greatly from myeloma so far as the general characteristics of neoplasms are concerned. Of the diseases now included under the group name myeloma, erythroblastoma would be worthy of the most consideration, but this disease has nothing really in common with our case. The absence of hyperplasia of the usual potential accessory myeloid depots in the liver and spleen,

History—S G a white boy aged 7 years, was admitted to the Presbyterian Hospital April 9, 1931. For six months he had walked with a limp and complained of fever and pains in various parts of the body. He had had hay fever in 1928 and 1929, and during August, 1930, injections for immunization were started and hay fever did not develop. The first part of October, 1930, the patient's mother noticed that he was walking with his left foot turned in. He complained that his feet hurt

Blood Picture									
Differential									
	Hemo- globin, per Cent	White Blood Cells	Red Blood Cells	Poly- mor- pho nuclears	Small Lym- pho- cytes	Large Lym- pho- cytes	Transi- tionals	Plasma cells	
First Entrance									
4/9	JS D *	1,850	3,490,000	6	74	9	1		
4/9		1,250							
4/11		1,000							
4/11	JS D	1,100	3,100,000						
4/15	SS N		3,200,000						
4/18		2,160							
4/20		1,050	3,330,000						
4/26	SS N	1,700	3,340,000					5	
4/27	SS N	1,850	3,400,000						
4/30	SS N	1,450	3,260,000	19	78	1		2	
5/6	SS N	2,100	3,600,000	23	66			1	
5/8	SS N	2,950	3,700,000	25	42	2			1
5/11	SS N	2,800	3,880,000	61	38	1			
5/13	SS N	2,350	3,420,000	58	40	2			
5/15	SS N	3,000	4,200,000	52	42	3			
5/18	SS N	2,150	4,500,000	50	50				
5/20	SS N	3,150	4,450,000	25	65				
6/3	SS N	3,150	4,500,000	54	46				
6/15	SS N	2,000	2,210,000	50	50				
Home									
Second Entrance									
7/29	SS N	2,400	3,570,000	64	34			1	1
8/10	SS N	2,000	3,430,000						
8/26	SS N	2,000	2,820,000						
8/31	SS N	1,200	3,800,000		95				
9/1		800		10	90				
9/2		910		31	68				
9/3		1,200		62	37	1			
9/5		3,600		52	48				
9/7		4,400							
9/17		3,750							
9/21	SS N	4,250	4,200,000	47	51	2			
9/24		9,550		77	17	6	1		

\* D indicates Dure N, Newcomer

when he walked. A few weeks later, pain in the left knee began, followed by pain in the left hip and in the back. The pain was worse on motion and during cold, damp weather. In November, fever, associated with headache, was noticed occasionally. His condition remained about the same for the next four months. Fever and headaches were present at times. Pain in various joints was intermittent.

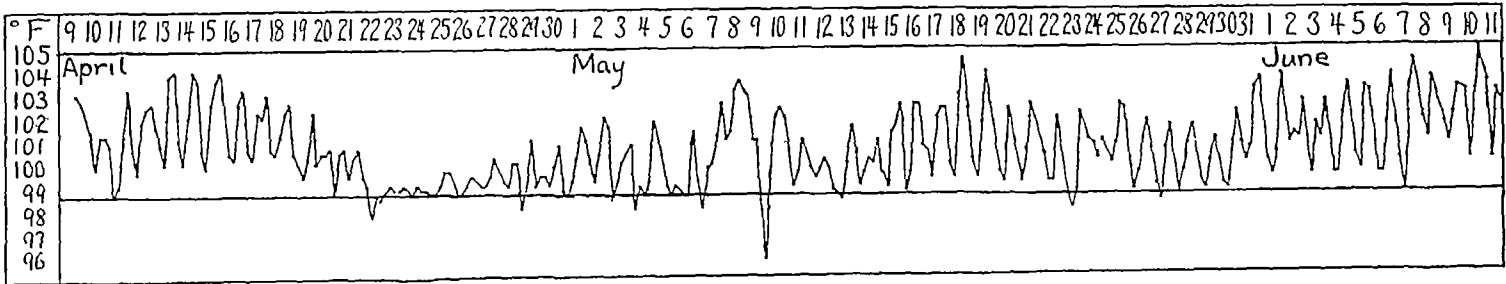


Fig 1—Temperature curve

together with the absence of an increase of white cells in the peripheral blood during life, excludes the leukemias as a depository for this disease. The absence of anatomic and anamnestic evidence of infection excludes, in a critical way, retrogressive changes from toxemia as a reasonable explanation. We believe that a disturbance in the circulatory mechanism of the myeloid tissue offers the clearest explanation for the disease at the present time. This suggestion is made with hesitancy, because the explanation is reached on deductive reasoning rather than on demonstration of the cause for the circulatory disturbance.

The patient's birth history was negative. He weighed 9 pounds (4,082 Gm) at birth and was breast fed for one year. Development was normal during infancy. Sore throats had occurred only occasionally. The tonsils and adenoids were removed at 4 years. He had whooping cough at 5 years and chickenpox at 6 years. The mother, aged 32, was well except for unilateral headaches. The father had had rheumatic pains four years previously. Two brothers, aged 5 and 7 years, were well. Further family history was negative. (He was of Nordic stock.)

Examination—On admittance the patient had a temperature of 103 F and a pulse of 104. He appeared somewhat pale and thin but did not seem very ill. Physical examination did not reveal any gross abnormalities, and neurologic examination was entirely negative. The blood count showed 1,850 leukocytes per cubic millimeter, 3,490,000 red cells and 56 per cent hemo-

From the Children's Ward and the Pathological Department of the Presbyterian Hospital

globin (Newcomer). A differential count of blood smears was 36 per cent polymorphonuclear leukocytes, 54 per cent small lymphocytes, 9 per cent large lymphocytes and 1 transitional cell. Examination of the urine gave entirely negative results. During the first week the temperature ranged between 100 F and 104 F, being highest in the evenings. It was quite noticeable that the patient seemed comfortable, played and did not



Fig 2—Appearance of vertebrae, April 11, 1931, showing lipping and thinness of the bodies

appear sick, even when the temperature was 104 F. During the second week the temperature gradually dropped to normal and the patient was afebrile for two days, followed by a gradual daily increase up to 102 F. During the next six weeks the temperature was distinctly intermittent. Mornings he was afebrile, while in the evenings the temperature was usually 102 F, occasionally 103 or 104 F (fig 1).

**Course**—The leukopenia persisted. Daily white blood counts during the entire month of April varied between 1,050 and 2,160. During May liver extract was given and the white count varied between 2,100 and 3,150 cells. The hemoglobin rose gradually from 55 to 66 per cent and the red blood count from 3,490,000 to 4,500,000. Urinalysis was uniformly negative. Blood smears repeatedly showed no malarial parasites nor unusual cell forms.

The roentgenogram of the chest, April 11, showed moderate hilar shadows, considered to be within normal limits. The bones of the entire skeleton were slightly rarefied uniformly. The atrophy was most marked in the pelvic bones, the lumbar vertebrae (fig 2) and the upper ends of the femurs. The nasal accessory sinuses appeared clear. The sella turcica and the skull bones appeared normal.

One month later there was a slight increase in density in the bones of the extremities, particularly at the epiphyseal lines. An additional ossification center was present in the wrists, seven in all previously six. Skull and sella remained negative.

The blood pressure was from 100 to 110 systolic and 65 diastolic. Spinal puncture yielded clear, colorless fluid, increased pressure, no cells, a trace of globulin, a negative Wassermann reaction, gold chloride curve 0111100000, sugar 60.5 mg, and total protein 33.3 mg. Stool cultures showed no pathogenic organisms. The blood Wassermann reaction was negative. Blood serum caused no agglutination with B typhosus, B paratyphosus, A B paratyphosus, B Brucella abortus, B Brucella melitensis, on three occasions. The agglutination index of the patient's blood for Brucella abortus (bovine) and B melitensis was 18 per cent as compared to a

normal of 1 per cent. The Pirquet skin test was negative. There was no free hydrochloric acid and there were 37 units of total acidity one hour after an Ewald test meal. The stools appeared normal and did not contain blood. Vision was 20/20 in each eye. Examination of the fundi was reported negative by the ophthalmologist. Neurologic examination by Dr. Peter Bassoe was negative except for slight hypotonicity of the leg muscles with brisk knee and ankle jerks.

The patient appeared comfortable and happy day after day during April and had no complaints in spite of the temperature range of from 102 to 104 F. The appetite was good at all times.

May 9, pain in the left elbow began. There was slight swelling around the joint. He also complained of pain in the lumbar region of the back. Acetylsalicylic acid relieved the pain in the elbow promptly, but the pain in the back persisted.

The patient was allowed to sit in a wheel chair for a short time daily during the latter part of May. He was remarkably comfortable and did not appear sick, although the fever continued. At this time the only positive manifestations were the fever, leukopenia and uniform atrophy of the bones as seen in the roentgenograms. Physical examinations remained negative and all laboratory tests failed to yield any positive information. Frequently he stated that his back hurt when he moved, and often he said he felt warm when his fever was highest. There were no chills. Headache occurred the first part of June but disappeared promptly when sodium salicylate was given.

The third week in June the temperature gradually dropped from a daily peak of 104 F to normal, and because of the insistence of the parents the patient was allowed to go home, June 18. For two weeks he felt well and then the fever returned and reached 104 F daily for three or four days but stayed between 100 and 101 for the next two weeks. The last two weeks in July the patient was nauseated continually and vomited frequently. He complained constantly of pain in the epigastrium and in the back.

July 29, he was readmitted to the hospital chiefly because of the abdominal pain and vomiting. The rectal temperature on admittance was 109 F, but about one hour later, after a sponge bath, it dropped to 105.6 F. The patient had lost 5 pounds (2,268 Gm) while at home. Physical examination revealed no abnormalities except tenderness to pressure over the lumbar



Fig 3—Ribs and upper portions of humeri, showing marked thinning

vertebrae. The blood count on readmittance showed 2,400 white cells, 3,570,000 red cells and 50 per cent hemoglobin. The differential yielded 64 per cent polymorphonuclears, 34 per cent lymphocytes, 1 transitional and 1 eosinophil.

Smears for malarial parasites were again negative on several occasions. Urinalysis was negative. There was no Bence-Jones protein detected at any time. Agglutination reactions for Brucella melitensis and Brucella abortus (bovine and porcine) were again negative. The Mantoux test was negative in a con-



centration of 1 to 1,000. Blood cultures were repeatedly negative. Urine cultures produced only staphylococci. The Wassermann and Kahn tests of the blood serum were negative. The Weil-Felix reaction was negative. The stools were soft-formed and contained no blood. The blood calcium was 10.2 mg and the blood phosphorus 3.62 mg.

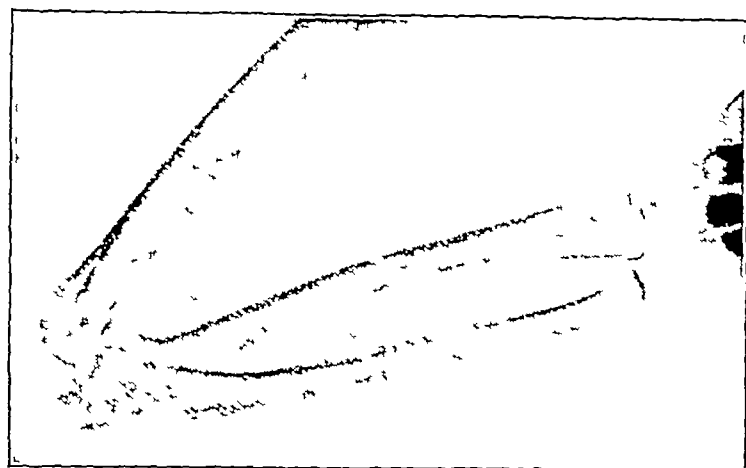


Fig 4—Bones of the upper extremity, showing thinning

The x-rays showed marked decrease in density in all the bones, especially the pelvic bones (figs 3, 4, 5, 6 and 7). The bodies of the vertebrae were flattened and narrowed on their anterior margins (fig 8). A roentgenogram of the chest was negative. The parents refused permission for a biopsy of one of the bones.

Because of the daily rise in temperature, it was suggested that a therapeutic test with quinine be tried. The day after quinine sulphate, 5 grains (0.3 Gm) three times a day, was started the patient became abruptly afebrile and remained so for five days, but the temperature then rose to 100 F or 101 F daily for the following two weeks.

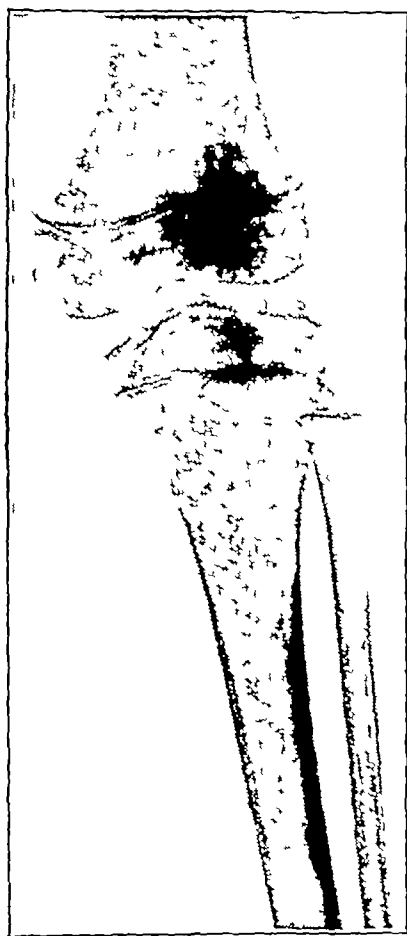


Fig 5—Bones of the lower extremity, showing thinning

Pain in the right arm persisted for several days but there were no other complaints. During the first three weeks in August the patient looked fairly well, ate heartily and was in a wheel chair almost every day. He was quite weak, but on August 18 he walked across the ward unassisted. The knee jerks became greatly exaggerated and a sustained ankle clonus was present on both sides. A positive Babinski reaction was elicited on the left foot. These results were interpreted as being due to pressure on the spinal cord, caused by the collapse of the anterior margins of the lumbar vertebrae.

August 22, he complained of headache and of pain in his feet. He became listless and refused to eat.

The temperature increased daily to 103 and 104 F, with morning drops to normal. He became sleepy and lethargic, ceased to play and showed no interest in his surroundings. A severe infection began in the pharynx, and ulcers rapidly developed over the pillars of the fauces, making swallowing extremely painful. The glands on both sides of the neck enlarged greatly and were very tender.

At this time the white count had dropped to 1,200 with 4 per cent polymorphonuclears and 94 per cent lymphocytes. Two days later the white count was 800 with 10 per cent polymorphonuclears and 90 per cent lymphocytes. Two blood transfusions were given, and sodium nucleinate was started by mouth. A few days later stimulating doses of roentgen therapy were used on the long bones. Within a week under this management the white count rose to 4,400, which was the highest count so far recorded, with 52 per cent polymorphonuclears and 48 per cent lymphocytes. The mouth infection rapidly disappeared but the cervical gland enlargement continued. Pain in the left ear began as the throat infection was subsiding, and in a few days a purulent discharge from the ear started.

After the so-called agranulocytic attack had passed, the temperature did not rise higher than 100 or 101 for the following two weeks. The cervical glands suppurated, were drained and decreased rapidly in size. The patient seemed to improve daily. He laughed, talked, played and offered no complaint. His appetite improved remarkably. A slight discharge from the left ear continued.

September 20, the patient complained of headache, and his temperature rose to 102.4 F. The following day the headache continued, and pain in the left shoulder began. However, the next day he was more comfortable and afebrile.

September 23, he was comfortable during the day but at about 6 o'clock in the evening became listless and did not respond to questions. A nystagmus developed with deviation of the eyes to the left and the quick component to the right. The ophthalmologist saw no abnormalities in the ocular fundi. The left ear contained a slight amount of seropurulent dis-



Fig 6—Bones of the foot, showing thinning of the cortex and marked decrease in the osseous material

charge. There was no mastoid edema. Within an hour from the onset of the nystagmus, rhythmic twitching of the muscles of the right arm began and spread to the right leg and right side of the face. The contractions increased in severity and developed into a generalized convulsion, which was stopped immediately by inhalation of ether. Spinal puncture yielded clear, colorless fluid, under normal pressure, negative globulin, 42 lymphocytes per cubic millimeter, negative benzidine test, and no organisms by smear or culture. The Queckenstedt maneuver on each side showed immediate increase in spinal fluid pressure. The blood drawn immediately after the convulsion contained 10.4 mg of calcium per hundred cubic centimeters. The total nonprotein nitrogen of the blood was 40.4 mg, and the blood sugar 158.8. The white blood count was 9,550 with 77 per cent polymorphonuclears, 22 per cent lymphocytes and 1 transitional cell.

Following the convulsion, the patient slept all night and awoke in the morning looking remarkably bright. He ate well at breakfast and offered no complaints. However, in the evening he became irrational and the muscles on the right side of the body began rhythmic contractions, followed by a severe generalized convulsion. Sedatives relieved the convulsion but the muscle spasms on the right persisted, and the patient remained comatose. The temperature rose rapidly to 107.4 F before death.

**Postmortem Examination**—The body weighed 34 pounds (15.4 Kg) and measured 126 cm in length. External inspection revealed nothing except marked pallor, slight flattening

of the front of the chest, and healing surgical incisions of the neck where recent subcutaneous abscesses had been drained.

The important organs of the neck, thorax and abdomen were very pale. The lymph nodes of the neck, axillae, mediastinum, mesentery, periaortic and peri-iliac regions,



Fig 7—The skull, showing evidence of marked decalcification, especially in the frontal region. Over the occipital region are radiant shadows suggestive of erythroblastosis (Cooley)

groins, gastrohepatic ligament, and the lymph follicles of the small and the large intestine were small and grossly unaltered.

The brain, aside from slight edema, had no changes of note.

The pituitary gland, thyroid gland, suprarenal glands, pancreas and testes were of normal size and showed no noteworthy alterations.

The front surfaces of the bodies of all the vertebrae were purple. Particularly in the lumbar and thoracic regions, there was also marked narrowing of the bodies. The compact layer of bone was very thin and fragile. The most striking characteristics of the cancellous portions were the sparsity of bone and the wetness of the marrow. As the inner portions of the bodies were exposed, red watery fluid exuded from many portions, leaving a soft network of fibrous strands and red marrow. In other portions in which the marrow was firmer, there was both red and gray myeloid tissue, the red predominating.

The ribs were misshapen. The dorsal surfaces were flattened. A sharp angle was present near the posterior axillary lines so that the back portions of the thoracic cavity were boxlike. The ribs were fragile and discolored blue in disseminated regions, owing to thinning of the compact layer and increase of the bone marrow. Nowhere were there nodular protrusions in the surfaces of the ribs.

The compact layer of the middle third of the femurs was only from 2 to 3 mm in thickness. The marrow was abundant, red, soft and wet in abundance of red watery fluid running from the cavity.

The calvarium was composed chiefly of compact bone. The diploe was sparse.

**Microscopic Examination**—The changes in the bone and bone marrow of the ribs, bodies of the vertebrae, ilium and right femur were similar in the following respects:

- 1 The marrow cavities were enlarged and the compact and cancellous bone was thinned by pressure atrophy.
- 2 Adipose tissue was present only in minute quantities in a few sections made from the bodies of the vertebrae.
- 3 Large thin-walled vascular spaces were very numerous and represented one of the outstanding changes.
- 4 Whenever nucleated cells were numerous the majority cells were members of the granulocytic and erythroblastic types.
- 5 Hemorrhage had occurred in multiple regions.

In the ribs, bodies of the vertebrae and pelvic bones, there were regions of active proliferation of erythrocytes, granulocytes and megakaryocytes. In the ribs particularly, however, there were places in which the marrow cavity contained very few of these cells, and the lumen was filled with a loose fibrillar structure containing many dilated blood vessels (fig 9). In some of these regions, fibroblasts were numerous. In the meshes between the fibrillar structure there was in many places an eosin-staining granular precipitate. Grossly, places were observed in the marrow that were filled with a red, watery fluid, and such regions probably represented those places in which erythropoiesis and granulopoiesis was sparse. These were found in the marrow of the femur and ribs.

In a typical section of marrow from the femur (figs 10 and 11) there were a few large arteries in the center of the section and a few scattered elsewhere toward the periphery. Disseminated irregularly through the section there were large regions containing red cells and fibrin where hemorrhage had occurred. Close to some of these places very few of the nucleated cells stained with hematoxylin and eosin. In addition to regions of hemorrhage, there were smaller vascular spaces with thin walls. The cells immediately abutting these regions were slightly elongated as if compressed, because the cells of the same type close by were made up chiefly of myelocytes and nucleated red cells. A few megakaryocytes were present. Because of the extensive necrosis of the nucleated cells, it was difficult to identify islands of erythropoiesis within vascular chambers, as described by Sabin and Doan Cunningham, and extravascular regions of granulopoiesis. However, in some places in which the cells stained fairly well it was commonly found that nucleated red cells were together in masses of four or five and that cells that might be in the granulocytic series were also together.

With phosphotungstic acid-hematoxylin stains the cellular regions were divided up by fine fibrillar network that included one or two cells in each mesh.

In another section of marrow from the femur, at least half of a section, 7 mm in diameter, was composed of thin-walled

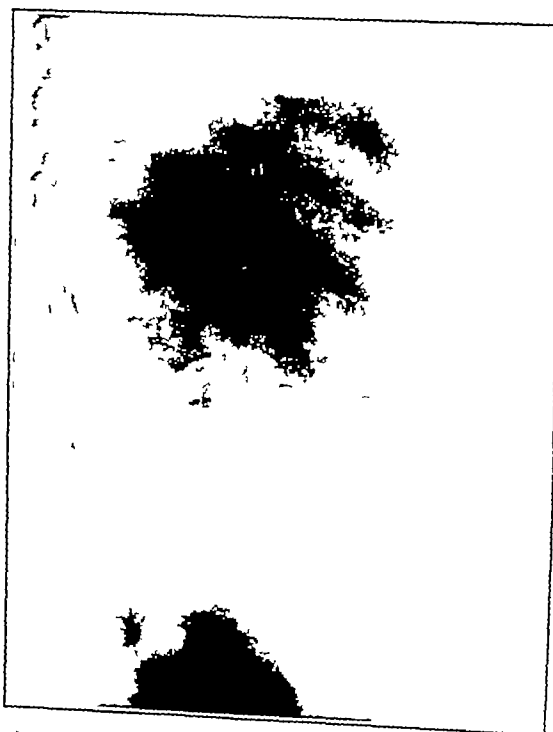


Fig 8—Appearance of the vertebrae, July 31, 1931, showing marked compression and increased thinning of the bodies.

vascular tissue. There was a thin fibrous wall. The lining cells were elongated endothelial cells. Most of these blood vessels were close together, appearing as if there were marked tortuosity of dilated veins. Elsewhere, the section resembled the one already described.

In sections of bodies of the vertebrae, the marrow cavity was crowded with nucleated granulocytes and erythrocytes. There were many large, thin-walled vascular channels. The cancellous bone was sparse and remained in the form of thin, isolated bony trabeculae. The compact layer was broken into small fragments. Where the breaks had occurred, there were frequently seen vessels that extended toward the perivertebral soft tissues, and accompanying these through the broken bony wall into the surrounding dense fibrous tissue were islands containing nucleated granulocytes and erythrocytes. The bone marrow of the bodies of the vertebrae were the best for study of the hyperplastic bone marrow because there was less distortion of necrosis and hemorrhage.

Microscopic preparations of the important organs of the trunk and cranial cavity, stained with hematoxylin and eosin and phosphotungstic acid-hematoxylin, were examined, particularly, of course, to search for islands of proliferated lymphatic and myeloid tissue. None were found.

There was no increase of hemosiderin in the phagocytic cells of the spleen and liver. It was thought at one stage of this investigation that anemia with the consequent proliferation of bone marrow might have resulted from an increased destruction of erythrocytes. There was no evidence supporting this explanation.

The arteries and veins of the organs of the trunk were examined to determine the presence of acquired changes in the vascular system to correlate with the interpretation that the stasis in the bone marrow may have been due to alterations in the veins.

**Pathologic Changes**—The characteristics of this disease that are usable in classifying it anatomically are the following. The marrow was hyperplastic only in the marrow cavities. The accessory depots of myeloid proliferation (liver, spleen, lymph glands and the like) were not stimulated. There were no localized overgrowths such as occur in neoplastic diseases. The cells of the hyperplastic marrow were the cells normally present in the marrow. Thin-walled, dilated spaces containing erythrocytes were numerous throughout the marrow. Hemorrhage and necrosis destroyed the hyperplastic marrow in multiple regions.

Because of the absence of leukemic manifestations during life, and even more because of the absence of a generalized hyperplasia of myeloid tissue in the organs of the trunk, leukemia can be definitely excluded.

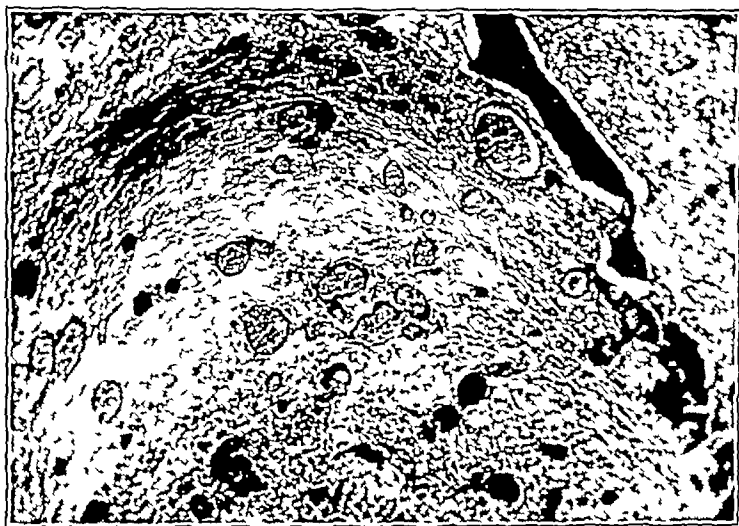


Fig. 9—Changes in ribs, interpreted as the oldest manifestations of this disease. The compact layer of the bone is very thin, the cancellous portions exceedingly sparse, the marrow cavity replaced by multiple thin-walled vascular spaces, and the myeloid tissue represented only by a few granulocytes and red cells in a fibrillary network.

During life there were secondary anemia and leukopenia in spite of the hyperplastic marrow. At no time did the patient lose blood by bleeding to account for the reduction in hemoglobin. None of the usual pathologic changes associated with infectious diseases, such as hyperplasia of lymphoid tissue and of the spleen, ulceration or suppuration, were found, except those that occurred during the last few weeks in the period of

marked agranulocytosis. In addition, there was no increase of hemosiderin in the phagocytic cells of the spleen and liver to account for an increased destruction of erythrocytes during life. We believe that these facts indicate that the hyperplasia of bone marrow did not arise from a general toxic condition and that it was not a compensatory mechanism because of an increased destruction of red cells in the reticulo-endothelial system.



Fig. 10—Cross section under low power of the marrow in the cavity of one of the femurs. There are many well formed arteries and veins, an absence of adipose tissue, and a marrow that, even though extensive, is relatively sparse in cells. In figure 11 are illustrated many of the thin-walled vascular spaces, regions of hemorrhage and necrosis that contributed to the sparsity of the cells.

The changes in the bone marrow that seem to be most typical of this disease involve the large vascular spaces filled with erythrocytes, and the hemorrhage and necrosis. In the literature no descriptions were found to aid in the explanation of these changes. The vascular spaces had thin walls resembling distended normal spaces rather than parts of a hemangioma. An explanation that suggests itself is that the escape of blood from the marrow was inadequate in this body for some reason. Stasis resulted, followed by bleeding and necrosis. This would account for the increased amount of bone marrow, the body attempting, of course, to maintain the normal level of erythrocytes and granulocytes. In the older regions of bone marrow, represented typically by the changes in parts of the ribs, there only remains in the marrow cavity many thin-walled vascular spaces filled with erythrocytes separated by a delicate fiber network in which a few nucleated red cells and granulocytes are observed.

The atrophy of bone resulted from the increase of marrow, because in the regions in which there is hyperplasia of bone marrow the growing red cells and white cells are in contact with the surface of the bone.

#### COMMENT

From the clinical standpoint, this case offers much of interest. In the first place, the almost continuous observation of this child for nearly five months failed to reveal any set of clinical phenomena that could be grouped as suggestive of any known clinical entity. In view of the results of the autopsy, this is scarcely surprising.

Unquestionably the three outstanding facts that the case presents are, first, the almost total absence of any complaint or prostration during almost all the entire course of the disease, second, the peculiar condition of the bone and third, leukopenia. In addition to these of

peculiar nature is the type of elevated temperature present over long periods and then absent for quite a while, only to return. When present, the temperature was high and intermittent day after day without causing any apparent inconvenience to the child. Hyperpyrexia was present, as is shown by the temperature of 109 F at the time of his second admittance to the hospital. Autopsy failed to reveal any brain condition, such as brain tumor or meningitis, to account for this peculiar rise. The elevation of temperature, when present, occurred nearly always at least once during the day (fig 1). There were occasional attacks of pain in the joints, with one attack of effusion into the elbow joint, which promptly responded to treatment with salicylates. The pain in the back, which occurred late in the course, was in all probability due to pressure on the spinal nerve roots. It should be emphasized, however, that at no time during the course of the disease was pain a very prominent complaint. The bone changes were peculiarly interesting. The roentgen evidence, which was confirmed at autopsy, was of bone with a very thin cortex and marked increase in the marrow. There can be little question after examination of the roentgenograms that this was a slowly progressive disease. The most definite evidence is to be seen in the change of the shape of the bodies of the cervical vertebrae toward the end of the course. This vertebral change has previously been observed<sup>1</sup> as part of the picture of multiple myeloma but never, so far as we can find out, as part of the picture of a generalized bone change affecting all the bones of the body.

The next point of interest is the leukopenia. This was extremely marked. At no time did the white count reach 5,000 except three days before death, when it was 9,550. At one time it was as low as 800, and during this period it is to be noted that the ulcerations of the mouth developed. In this respect the condition is similar to that of agranulocytosis, which no doubt existed. It should be noted, however, that for months

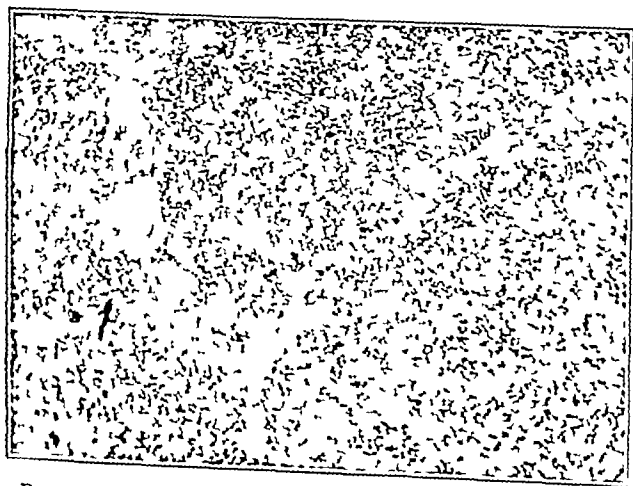


Fig. 11—Section showing characteristics of the marrow of the femurs. The nucleated cells are normoblasts, granulocytes, megakaryocytes and the supporting structure. Hemorrhage, large thin walled vascular spaces and necrotic regions are present and account for the sparsity of cells in a marrow that completely fills the cavities of the femurs.

previous to this the leukopenia had been present without very marked anemia and without an exceptional change in the type of the white cells. Immature white cells were not noted and myelocytes were not seen. There was also present a certain amount of anemia but

this was not marked, even at a time just previous to death. At no time was there evidence of any generalized or local infection that could in any way account for the picture, and this lack of clinical evidence of infection was substantiated by autopsy.

From the standpoint of diagnosis, several conditions were considered. Of course with the type of fever



Fig. 12—Preparation from one of the vertebrae, illustrating the most cellular regions observed in the bone marrow. In addition to the marked atrophy of the compact and cancellous portions there is an unusual mixture of nucleated erythrocytes and granulocytes and a moderately dense fibrillar structure separating the cells into islands of from two to four cells. The majority of cells are normal forms of normoblasts, erythrocytes and granulocytes.

existing over such a long period of time and without much prostration, we considered undulant fever but this was effectually ruled out by all the tests that were tried. From the first, multiple myeloma was considered, but neither in the roentgenograms nor at autopsy were such myelomatous masses discovered as are characteristic of this disease. Agranulocytosis was thought of. There is no question that it was present symptomatically, and it seems altogether likely that it can be associated with the ulcerative condition in the mouth toward the end of the disease. At the same time, the patient rarely complained of sore throat, and this was never a symptom that commanded our attention. While it is conceivable that the temperature curve might be attributed to agranulocytosis certainly the bone changes had nothing to do with that disease. We were therefore unable to place this disease picture in any category that was known to us.

#### SUMMARY

A peculiar case of bone marrow change was found in a boy, aged 7 years. There was a high and irregular fever for several months. The general condition was at all times indefinite except for marked leukopenia and definite thinning of the cortex of the bones, which grew progressively more marked.

310 South Michigan Avenue

**Medicine and Physiology**—A statement that medicine is founded upon physiology is, as has been said, but a fraction of the truth. There are vital branches of clinical knowledge to which physiology contributes little if at all. There are three chief ways in which clinical progress is achieved and these may be reviewed briefly. They are (a) the discovery of disease, that is, the identification of disease and its natural history; (b) experimental work on clinical cases; and (c) the application of physiological ideas and discoveries.—Lewis, Thomas. *The Relation of Clinical Medicine to Physiology from the Standpoint of Research*. *Brit Med J* 2: 1047 (Dec 10) 1932.

PRIMARY ACTINOMYCOSIS OF  
THE STOMACH

## REPORT OF CASE

ALEXANDER W BLAIN, MD

DETROIT

In 1925, Sanford and Voelker<sup>1</sup> were able to find 670 cases of actinomycosis which had been reported in the United States. In the last six years additional

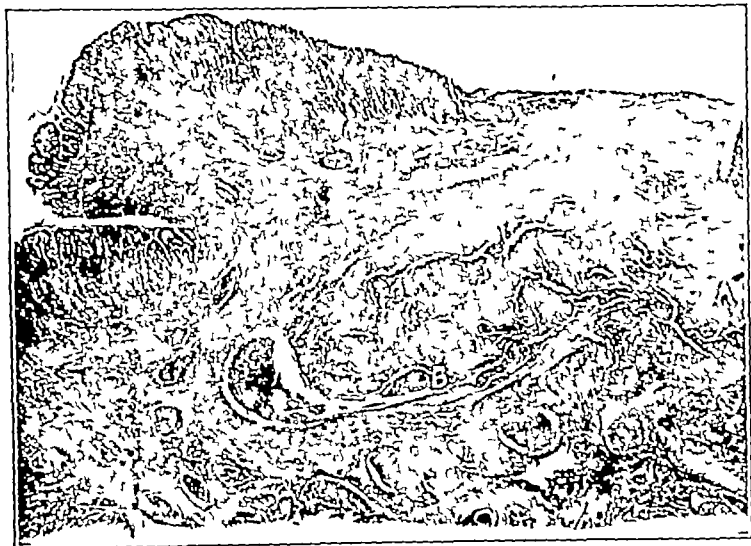


Fig 1—Low power magnification of stomach wall showing inflammatory areas characterized by suppuration, productive changes, follicular arrangement of lymphocytes and clusters of actinomycetes at A and B. Hemotoxylin and eosin stain.

reports have increased that figure to nearly a thousand. In 18 per cent of these 670 cases the lesions were intra-abdominal, involving the intestine, appendix or liver, but no stomach involvement was reported. To those engaged in practice for twenty-five years it must seem apparent that the number of reported cases fail to reveal the true incidence of actinomycosis, that surely several thousand cases of actinomycosis of the head and neck, skin and extremities must have been observed during that time.

The reason for reporting a case of primary actinomycosis of the stomach is twofold. In the first place, no cases have been reported in this country, and apparently there is only one authentic case in the European literature. Secondly, there is unquestionable proof that the case here reported was primary in the stomach, the infection later metastasizing to the liver.

## REPORT OF CASE

G. E. B., a Scotch die maker, aged 37, who was born in a large town in the iron manufacturing district of Scotland, had served for five years in the tank forces of the British Army, had been gassed several times and had had shrapnel removed from his arms, leg and head in 1914 and 1919. On four occasions his regiment had been almost completely annihilated. Following the war he worked in a factory repairing trucks. He came directly from Europe to Detroit.

Jan 22, 1931, the patient was admitted to the Jefferson Clinic Hospital complaining of epigastric pain and gas on the stomach, which had bothered him for the previous five months. The attacks of pain began one hour after eating and were relieved by food or baking soda. The bowels were constipated but there was no history of tarry stools or vomiting of blood. There was tenderness on deep pressure just below the xiphoid

process. The routine laboratory reports were essentially unimportant. The gastro-intestinal studies, as reported by Dr. W. K. Lim, the roentgenologist, showed some deformity of the stomach which affected passage of the meal through the pylorus but which did not produce obstruction. This was thought to be due to a chronic gastric ulcer.

Operation was performed, Jan 28, 1931. A supra-umbilical incision was made and a mass occupying the lesser curvature and the posterior wall of the stomach was found. The diagnosis at the operating table was uncertain, but it was thought best to consider the lesion malignant, and a subtotal gastrectomy was performed. The operation was so radical that it was difficult to bring the intestine to the small remaining portion of the stomach. There was no other intra-abdominal pathologic condition, and the liver appeared normal.

The pathologic examination was reported by Dr. O. A. Brines as follows: The stomach wall contained a localized area of thickening 8 cm in diameter and 2 cm in maximum thickness. This thickened stomach wall contained several abscess cavities, the largest of which was 1 cm in diameter. There was no frank ulceration of the mucosa. The microscopic examination showed a chronic granulomatous reaction with dense lymphocytic and plasma cell infiltration, necrosis, suppuration and abscess formation. There was no evidence of new growth involvement or specific type of infection in the sections examined at that time.

The patient's postoperative condition was poor, but he improved later and was discharged, February 26. Two weeks later he was seen at the clinic. At this time he looked bad and felt very weak. He was losing weight, his appetite was poor and he complained of abdominal pain. A check-up gastro-intestinal series showed good passage of meal through the stomach.

He was readmitted to the hospital, March 30, and a diagnosis of subphrenic or hepatic abscess was made. An exploratory laparotomy was performed and the liver was found to contain numerous nodules, some of which exceeded 2 cm in diameter.

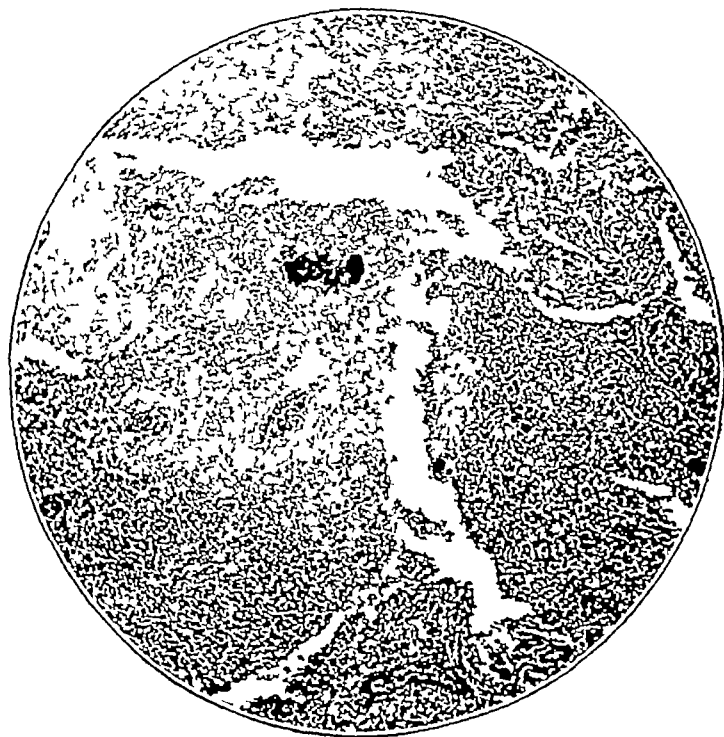


Fig 2—Higher magnification of granulomatous area in stomach containing pyemic focus and ray fungus. Gram stain.

The abdominal cavity was explored but there were no other important observations. A biopsy specimen was not taken.

The patient was discharged, May 1. In the interval between his second and final admissions he was quite well until August 1, when diarrhea developed, accompanied by weakness, exhaustion and inability to eat. A marked secondary anemia had developed and he was extremely emaciated and cachectic. No sinus or fistula had formed after either operation. He was readmitted, Aug 3, 1931, and died the following day.

From the Department of General Surgery, Jefferson Clinic and Diagnostic Hospital.  
1. Sanford A. H., and Voelker Minna. Actinomycosis in the United States, Arch Surg 11 809-841 (Dec) 1925.



The physician who performed the autopsy considered the liver to contain metastatic new growth areas undergoing liquefaction necrosis. Actually these were abscess nodules showing the characteristic honeycombing of actinomycosis. The pathologist, on microscopic examination, found that a diagnosis of actinomycosis of the liver could be made easily. While a review of the original sections from the stomach failed to

of the stomach and that, since Pohl based his diagnosis on palpation and on the demonstration of ray fungi in a perigastric abscess, an anatomic diagnosis failed in this case also. He considers Brunner's case as that of a subphrenic abscess, leaving Hadjipetros' case as the only one in which a diagnosis of primary actinomycosis of the stomach was justified.

#### CONCLUSIONS

1 A proved case of primary actinomycosis of the stomach with metastasis to the liver, reported here, is apparently the second authentic case in the medical literature.

2 A review of both the American and the European literature reveals no cases of primary gastric actinomycosis to have been reported in the United States and that in the six cases reported in the European literature only one survives strict diagnostic scrutiny.

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### FOREIGN BODY IN MEDIASTINUM

#### ESOPHAGOSCOPIC REMOVAL UNDER ROENTGENOSCOPIC GUIDANCE

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AND

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ROCHESTER, MINN.

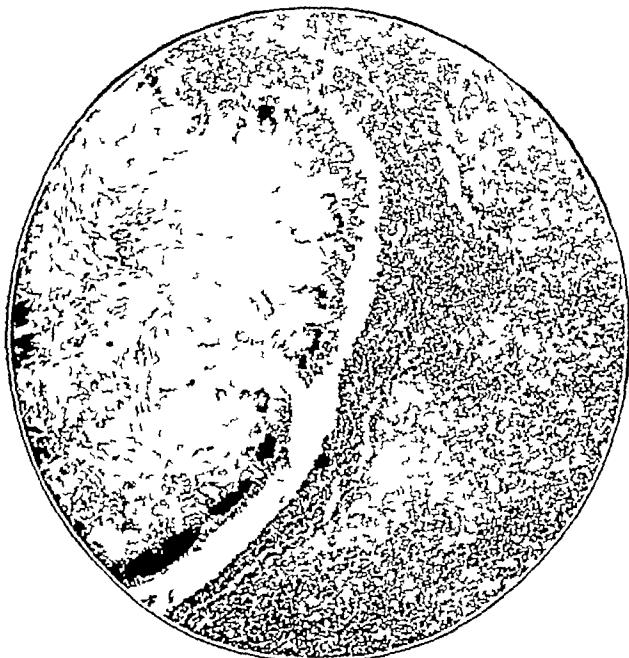


Fig 3—Still higher magnification of infected area in stomach wall showing characteristic granulation tissue and a large fungous mass with necrotic center and radially arranged club shaped bodies at the periphery. Gram stain.

reveal positive evidence of specific infection, the similarity between the inflammatory reaction in the stomach and the liver tissue was so striking that it was quite apparent that the stomach lesion was also actinomycosis. The original tissue blocks from the stomach were then serially sectioned and out of about 300 slides a dozen were found in which the ray fungus could be identified.

#### COMMENT

In reviewing the subject of intra-abdominal actinomycosis in the literature and in textbooks of surgery and pathology, one finds that actinomycosis of the stomach, if mentioned at all, is spoken of as being exceedingly rare. Wheeler<sup>2</sup> says that ulceration of the duodenum and jejunum from actinomycotic infection is rare and that the stomach is practically immune. It is suggested that the hydrochloric acid in the gastric juice either kills the fungus or inhibits its activity. Nathan<sup>3</sup> in 1929, reviewed the literature and found only six cases reported as primary actinomycosis of the stomach, namely, (1) Israel's case in 1889, (2) Prutz's case in 1899, (3) Grill's case (date not given), (4) Brunner's case in 1907, (5) Pohl's case in 1912, and (6) Hadjipetros' case in 1920. In commenting on these cases Nathan expressed the belief that Grill could not prove his case that Prutz could not demonstrate ray fungi in the region of the perforated ulcer and that in his case the possibility of the primary focus being in the large or small intestine had to be considered. He contends that Grill's case was one of actinomycosis of the lung with secondary involvement

of the mediastinum following perforation of the esophagus by a foreign body always constitutes a grave surgical problem. Such a complication may be spontaneous or may occur from attempted removal or displacement. The proper procedure in dealing with such a problem is open to much speculation. The situation of the perforation, the degree and extent, whether the foreign body has partially or wholly entered the mediastinum, and its opacity are some of the factors that necessarily influence judgment as to treatment.

Excellent articles have been contributed to the subject of mediastinitis resulting from a foreign body among which may be mentioned those of Killian,<sup>1</sup> Orton - Iglauer and Ransohoff,<sup>3</sup>



Fig 1—June 16, 1932. Toy horse and rider at level of arch of aorta. Mediastinitis and inflammatory infiltration of right lung.

From the Division of Medicine, and the Section on Roentgenology, the Mayo Clinic.

An abstract of this paper was published in the Proceedings of the Staff Meetings Mayo Clinic 7, 29 (July 20) 1932.

<sup>1</sup> Killian H. Beitrag zur operativen Behandlung komplizierter Fälle von Fremdkörpern der Speiseröhre mit besonderer Berücksichtigung der Indikationen. Arch. f. klin. Chir. 122: 382-443, 1922.

<sup>2</sup> Orton H. B. Mediastinitis Following Esophageal Foreign Body. Report of Cases. Arch. Otol. 12: 635-641 (Nov.) 1930.

<sup>3</sup> Iglauer Samuel and Ransohoff J. L. Perforation of the Esophagus by a Foreign Body with Report of a Case Presenting Unusual X-Ray Signs. Laryngoscope 34: 821-825 (Oct.) 1924.

<sup>2</sup> Wheeler W. I. deC. Ulceration of Duodenum and Jejunum, Brit. J. Surg. 15: 430-437 (Jan.) 1928.

<sup>3</sup> Nathan H. Primary Gastric Actinomycosis. Arch. f. L. u. A. 277: 451-49, 1929.



Seiffert,<sup>4</sup> Kramer<sup>5</sup> and King<sup>6</sup> Although considerable emphasis has been placed on external drainage in treatment, the excellent result obtained by drainage through the esophagus does not seem to receive the emphasis it deserves.

The following case constitutes, we believe, a new endoscopic experience in the treatment of a patient and in the removal of a foreign body, which was lying entirely in the mediastinum and which was removed successfully under roentgenoscopic guidance, by means of endoscopy.

#### REPORT OF CASE

A girl, aged 3 years, began to suffer from dysphagia two months previous to admission to the Mayo Clinic. The dysphagia gradually progressed, failing to respond to various types of medical treatment. The home physician was finally consulted, and he advised roentgenologic examination of the thorax. This revealed a foreign body at about the level of the arch of the aorta and presumably in the esophagus. The child was then referred to the Mayo Clinic for observation and treatment and was first seen by us, June 16, 1932. A week previously, however, mediastinitis and pneumonia had developed,

subsided, although the mediastinal infiltration was still present (fig 2). After surgical consultation, it was felt that an esophagoscopic approach offered the best chance for successful removal of the foreign body. Esophagoscopy was therefore carried out under general anesthesia, induced by the administration of tribrom-ethyl alcohol (avertin) and pentobarbital sodium (nembutal) by rectum. The esophagus was found to be obstructed in its middle third. The place where the foreign body had ulcerated through the esophagus could be visualized readily in the left lateral wall. With the esophagoscope in place, and with a small probe extending down as far as possible into the lumen of the esophagus, it was determined under roentgenoscopic control that the foreign body was to the right of and posterior to the esophagus, the foreign body apparently having worked its way through the mediastinum to this point. An opening was then made through the wall of the esophagus overlying the foreign body, and forceps were introduced into the mediastinum. By means of blunt dissection the foreign body was reached and drawn into the lumen of the esophagus. Because of its size and the many sharp angles present, as well as the danger of lacerating the esophagus higher up by trying to extract it in one piece the horse was broken into two pieces and easily removed through the



Fig 2—July 11, 1932 Toy horse and rider in same position as in figure 1, mediastinal infiltration is still present, but inflammatory reaction has subsided.



Fig 3—Appearance following esophagoscopy. Toy rider in intestinal tract.



Fig 4—Widening of mediastinal shadow, as shown in last roentgenogram made.

both conditions being present at the time of our original examination.

Roentgenograms of the thorax and esophagus disclosed the presence of a toy horse and rider at the point mentioned (fig 1). There was evidence of mediastinitis and inflammatory infiltration in the right lung. Roentgenoscopic examination revealed that the foreign body was outside the lumen of the esophagus, and this was later confirmed by esophagoscopic examination. Owing to the pulmonary involvement present, it was deemed advisable to postpone an attempt at removal for a time.

The child was permitted to return home and was brought back to the clinic, July 11. At this time she was able to take small sips of fluid, but even this produced severe spasms of coughing and strangulation. The patient was in a very poor condition and much dehydrated. Roentgenograms of the thorax, however, revealed that the inflammatory reaction had

subsided. In carrying out this manipulation the rider of the horse was dislodged in the esophagus and passed into the stomach. Further observation revealed that it was passing through the gastro-intestinal tract without difficulty (fig 3).

Immediately following esophagoscopy, a temperature of 104 F developed. However, the temperature returned to normal on the following day, and much to our surprise, the child was able to take liquids without difficulty. Since then, she has been eating without the least evidence of obstruction and she gained 5 pounds (23 Kg) in one week. The last roentgenogram (fig 4) revealed widening of the mediastinal shadow, probably as a result of manipulation, but the patient has had no further difficulty since then, and no further roentgenograms have been made.

#### COMMENT

Two things especially deserve emphasis in this case first, the possibility, and the advisability, of removal of the foreign body by endoscopic means, second, the invaluable aid of roentgenoscopic guidance in finding and removing the foreign body, as it would have been impossible to carry out such a procedure otherwise.

<sup>4</sup> Seiffert, A. Oesophagusschlitzung zur Behandlung frischer vom Oesophagus ausgehender Verletzung des Mediastinums. *Arch. f. Klin. Chir.* 150: 569-576, 1928.

<sup>5</sup> Kramer, Rudolph. Endoscopic Treatment of Esophageal Suppuration. *Laryngoscope* 39: 97-102 (Feb.) 1929.

<sup>6</sup> King, Edward. Perforation of the Esophagus with Report of Six Cases. *Ann. Otol., Rhin. & Laryng.* 38: 351-359 (June) 1929.

## TREATMENT OF PERNICIOUS ANEMIA

## EFFECT OF A SINGLE INJECTION OF CONCENTRATED GASTRIC JUICE (ADDISIN)

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JAMES E SHERMAN, M.D.  
CINCINNATI

It has been demonstrated by Riddle and Sturgis<sup>1</sup> that a single massive dose of liver extract (30 vials) produces a therapeutic effect on pernicious anemia which is approximately that obtained by administering three vials daily for ten days. The large dose, however, produces more active stimulation of the bone marrow. They report the results found in the blood of three patients with pernicious anemia following a single massive dose. In all, large numbers of nucleated red cells appeared in the circulating blood ("blood crisis," "blast crisis") during the first two or three days after the liver extract was given.

In previous communications we<sup>2</sup> have reported the results obtained in pernicious anemia by the intramuscular injection of concentrated gastric juice from man, swine and dogs and have shown that the response is due to the presence in the normal gastric secretions of a powerful hematopoietic substance. Further we have shown that this substance is thermolabile, dialyzable through collodion, and exhaustible and more recently we (J H F) have found that it withstands chemical treatment known to destroy enzymes. It is therefore probably a hormone, which we have designated addisin.

The matter of dosage of concentrated gastric juice is only one of many points to be determined. In our first patients, treated with concentrated human gastric

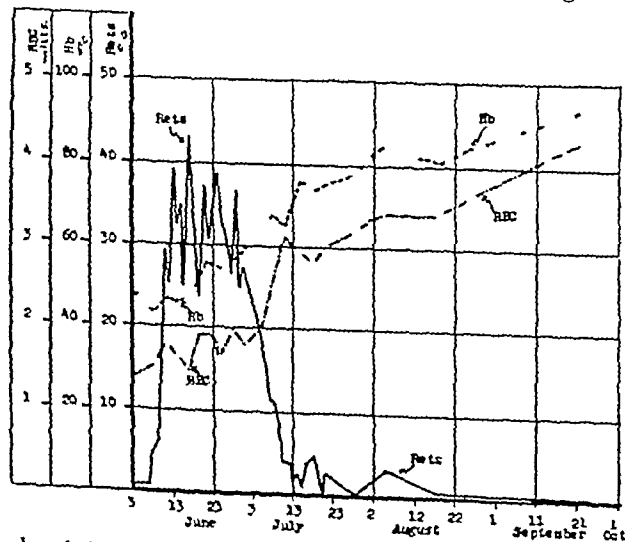


Fig. 1 (case 1)—The hematologic response following a single injection of addisin.

juice and later with concentrated swine gastric juice, frequent intramuscular injections representing relatively small quantities of original gastric juice were employed. Recently we have adopted a measure of dosage which,

From the Department of Internal Medicine, University of Cincinnati College of Medicine, and the Medical Clinic, Cincinnati General Hospital.  
1. Riddle M. C. and Sturgis C. C. *Am. J. M. Sc.* 150: 1 (July) 1915.

2. Morris R. S., Schiff L., Foulger J. H., George J. E., and Sherman J. E. *Am. J. M. Sc.* 154: 1 (March) 1917. A Swine Hematopoietic Hormone in Normal Gastric Juice. *J. A. M. A.* 68: 1650 (March 26) 1912. *Am. J. M. Sc.* 154: 1 (Dec.) 1917.

though crude, enables one to gain a rough idea of the amount of addisin injected. The material derived from 100 cc of original gastric contents we have designated as 1 unit. Thus, if a patient is given a concentrate obtained from 3 liters (3,000 cc) of original juice, he is said to have received 30 units. This standard leaves much to be desired in the way of accuracy, for as yet we have no means of determining the relative potency of various lots of native gastric contents. There are also many factors in concentration which may lessen activity, only some of which, we believe, are known.

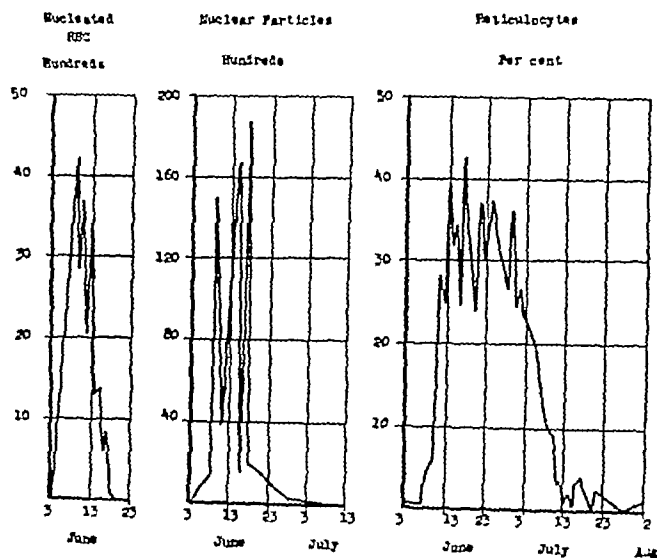


Fig. 2 (case 1)—Graphic representation of evidence of marrow stimulation.

Recently, one of us (J H F) has been subjecting the concentrated swine juice obtained through the cooperation of Dr E. A. Sharp of Parke, Davis & Co. to further manipulations (to be reported later) in an attempt to obtain greater concentration and purification of the hematopoietic hormone addisin. Thus, it has been possible to obtain a highly concentrated, potent material for intramuscular injection. In one case, for example, 3,200 cc of native swine juice (lot 844674) was reduced to a volume of 5 cc for injection (32 units). In another, 5,700 cc of native swine juice (lot 847519) was reduced to a volume of 8.5 cc (57 units). A single intramuscular injection of each of these preparations has been given in an untreated case of typical pernicious anemia. It is the hematologic response in these two patients which forms the basis of the present paper.

## REPORT OF CASES

CASE 1—C. S., a white man, aged 65, was admitted to the Cincinnati General Hospital, May 23, 1932. Examination of the blood showed 14 million red cells, from 0.6 to 1.3 per cent reticulocytes, 47 per cent hemoglobin (Sahli) and 5,300 leukocytes. No nucleated red cells were seen in smears made on four different days prior to treatment. June 7, an intramuscular injection of 5 cc was given. This represented material obtained from the concentration and purification of 3,200 cc of native swine juice (32 units). A remarkable hematologic change set in the following day (charts 1 and 2). June 8, about twenty hours following the injection, there were 4,000 nucleated red cells per cubic millimeter. The following day they reached their maximum, 4,400 per cubic millimeter. The "blood crisis" persisted for twelve days. Coincident with the blood crisis, there appeared in the blood large numbers of erythrocytes containing nuclear particles. These were usually in polychromatophilic cells and were minute, i.e., pin-point in size and as a rule, single resembling in all respects Howell-Jolly bodies, except for their smaller size. They reached their maximum on June 17, when they numbered 19,000 per cubic millimeter. The

reticulocytes rose steadily from 40 per cent on June 8 to 40.1 per cent on June 13. Instead of the anticipated decrease, however, they remained between 25 and 42.9 per cent (red blood cells 1,500,000) continuously (daily counts) until July 9. By July 13, the reticulocytosis, which lasted over a period of thirty-four days, was ended. There was no noteworthy change in the red cell count until June 28, two weeks after the injection when they numbered 20 million, the hemoglobin was then 56 per cent. Thereafter, there was a steady rise in red count

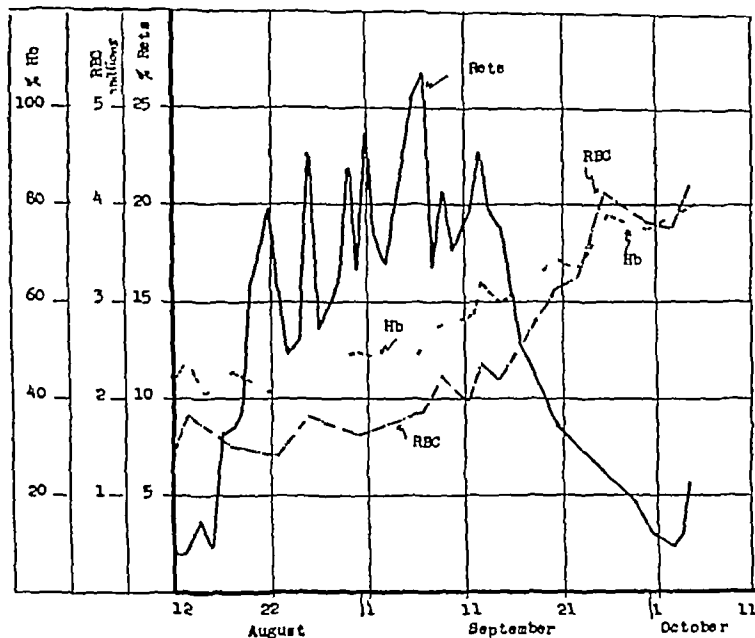


Fig. 3 (case 2)—The hematologic response following a single injection of addisin

and hemoglobin till September 21, when examination of the blood showed 4.5 million red cells and 93 per cent hemoglobin. Since the original injection on June 8, the patient has received no further treatment. A few days after the onset of the reticulocytosis, there was marked subjective improvement. A maintenance dose (30 units) was injected intramuscularly, September 21. There was no reaction, indicating that anaphylaxis is not produced by concentrated gastric juice of swine, when injected intramuscularly.

CASE 2—G V, a white man, aged 65, was admitted to the Cincinnati General Hospital, Aug 11, 1932. Examination of the blood showed 1.5 million red cells, 20 per cent reticulocytes, 44 per cent hemoglobin (Sahli) and 5,500 leukocytes. August 12, he was given a gluteal injection of 85 cc. This represented material obtained from the concentration of 5,700 cc of native swine juice (57 units). The response of the bone marrow to stimulation was less prompt but more prolonged than in the first case (charts 3 and 4). Prior to the injection of addisin, there were 25 nucleated red cells per cubic millimeter. Three days after injection, their number had increased to 465. Daily counts showed 200 or more per cubic millimeter continuously until September 8, a period of twenty-four days. They reached a maximum of 1,550 on August 29. Red cells containing nuclear particles were also present in large numbers, but actual counts were not made as in the first case. The reticulocytes rose to 8 per cent on the fifth day following the intramuscular injection. The increased percentage was present continuously for a period of forty-four days. The greatest number (26.8 per cent with a red count of 20 million) was found on September 7, twenty-six days after the injection of addisin. Throughout the period of the reticulocytosis, the eosinophils showed considerable fluctuation. For the greater part of the time there was an eosinophilia of varying degree, the maximum (17 per cent) occurring on August 23, eleven days after injection. This phenomenon was much less pronounced in the first case (maximum, 8 per cent). We have also noted an increase in the eosinophils following the intramuscular injection of concentrated human gastric juice. The red cell count showed a slow rise to 2.2 million on September 9, with 55 per cent hemoglobin. By September 26 it had reached 4.1 million

with 78 per cent hemoglobin, without further treatment. Subjective improvement was noted, as in the first case, shortly after evidences of bone marrow stimulation appeared.

#### COMMENT

The hematologic response in each of the patients following a single intramuscular injection of addisin is unique, so far as we have been able to discover from a study of the literature. The large numbers of nucleated red cells and of red cells containing nuclear particles, with the associated polychromatophilia, and the great increase in percentage of reticulocytes are all indications of an intense stimulation of the bone marrow. Some of these signs have persisted longer than a month. Before the reticulocytosis has come to an end the red count and the hemoglobin have begun to increase and have gone steadily upward until practically normal figures have been reached. Such results it should be emphasized again, have followed a single injection of highly concentrated swine juice.

In reviewing the literature, we find that Minot, Murphy and Stetson<sup>3</sup> report a reticulocytosis of twenty-three days' duration with liver therapy. The maximal reticulocyte count was 21 per cent on the fifth and sixth days. For the last twelve days it was 10 per cent or less. They point to the fact that this is an unusually prolonged reticulocytosis in response to liver therapy. In our two cases, reference to the charts shows that the reticulocytosis was not only more prolonged but greater in degree. Whether this will prove to be the rule remains to be seen.

In treating pernicious anemia with concentrated human gastric juice, the best response we obtained was that following an injection of material representing 900 cc of original juice (9 units). In this instance, however, there was no outpouring of nucleated red cells, though polychromatophilic cells containing nuclear

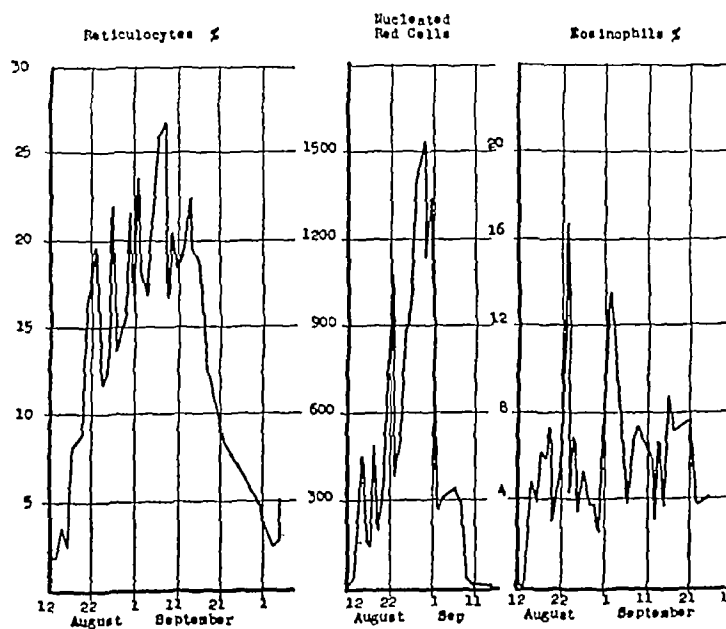


Fig. 4 (case 2)—Graphic representation of marrow stimulation

particles and reticulocytes were greatly increased. The duration of the response, which began ten hours after the injection, had subsided by the end of six days.

#### CONCLUSIONS

1. A single intramuscular injection of concentrated gastric juice (addisin) from swine has produced manifestations of intense stimulation of the bone marrow. "Blood crises" lasting twelve and twenty-four days,

<sup>3</sup> Minot, G. R., Murphy, W. P., and Stetson, R. P. *Am. J. M. Sc.* 175: 581 (May) 1928.

accompanied by marked reticulocytosis of thirty-four and forty-four days' duration, respectively, were observed. This phase was followed by more rapid increase in hemoglobin and maturation of the red cells.

2 Coincident with the evidence of stimulation of the bone marrow, marked subjective improvement was noted.

3 In the light of our limited experience, it seems probable that a product can be obtained from the gastric contents of swine of such potency that a single intramuscular injection may be sufficient to bring about a complete remission in pernicious anemia. Should this prove to be true, it seems not unreasonable to predict that one injection of potent material at intervals of two or more months may be all that is required in this disease to maintain the blood count and the hemoglobin at normal levels.

## TWO MECHANISMS IN THE PRODUCTION OF DUROZIEZ'S SIGN

THEIR DIAGNOSTIC SIGNIFICANCE AND A CLINICAL TEST FOR DIFFERENTIATING BETWEEN THEM

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AND

A. CARLTON ERNSTENE, M.D.

LOSTON

The combination of an aortic diastolic murmur and peripheral signs, such as capillary pulse, wide pulse pressure and Duroziez's sign, readily establishes the diagnosis of aortic insufficiency. In certain instances, however, the diagnosis is beset with difficulties. A diastolic murmur may be heard along the left border of the sternum in a patient with mitral stenosis, and the possibility of this murmur being due to the Graham Steell phenomenon presents itself. Under such conditions the presence or absence of the peripheral signs of aortic regurgitation assumes considerable importance. In other patients the peripheral signs of aortic regurgitation may be clearly evident, but the presence of the diastolic murmur may be doubtful.

Our purpose in this communication is to present the results of a study which permit a clearer understanding of the meaning of peripheral vascular signs and so help to resolve the clinical difficulties mentioned. Duroziez's sign has been the particular focus of this study, but the various peripheral signs tend to be present concomitantly, and so the accurate evaluation of one sign leads to a clearer understanding of the others.

Corrigan,<sup>1</sup> in his classic description of aortic insufficiency, was the first observer to note the presence of a diastolic murmur over the larger vessels. "In the cases where insufficiency is considerable and permits a large quantity of blood to flow back into the ventricle, one hears a double bruit in the ascending aorta." This sign, according to Corrigan, was one of the three vascular signs of aortic insufficiency. The presence of a double murmur heard over the peripheral vessels by pressure of the stethoscope was first described by Poullaud.<sup>2</sup> It remained for Duroziez<sup>3</sup> however, to study the phenomenon more fully.

occurrence with the postmortem observations of aortic insufficiency.

In 1861, Duroziez<sup>3</sup> emphasized the diagnostic significance of the phenomenon and said "The double intermittent crural murmur always accompanies aortic insufficiency, it reveals it in difficult and complicated cases, it is its pathognomonic sign. Now this has not been said by any author—I am going to prove it." In the course of his communication, Duroziez modified this somewhat dogmatic statement by mention of patients with enteric fever, saturnism and chlorosis, in whom the sign was present even in the absence of aortic regurgitation. In the years since, clinical observations have made it increasingly evident that, while Duroziez's sign usually can be elicited in patients with the intracardiac signs of aortic insufficiency, these phenomena are mutually independent—one may be present without the other. The diagnostic significance of Duroziez's sign consequently has occasioned considerable discussion and investigation.

Tice,<sup>4</sup> in 1911, made a valuable clinical contribution on the significance of the peripheral signs of aortic insufficiency. In a series of 124 cases of aortic insufficiency, the presence of Corrigan's pulse was observed in 95 per cent of the cases, capillary pulsation, 90 per cent, Duroziez's sign, 88 per cent, visible arterial pulsation, 76 per cent, pistol shot sound, 45 per cent, and femoral tones, 24 per cent. He stated that Duroziez's sign is not pathognomonic of aortic insufficiency but that it is also observed in other diseases with perfectly normal and competent valves. His concept of the mechanism whereby the double murmur is produced is not clear. "The essential portion of the phenomenon, the cardiodiastolic or arteriodiastolic, results from the backward flow of blood, produced chiefly by the vasomotor dilatation."

More recently, Laubry, Brosse and van Bogaert<sup>5</sup> have reported an extensive study of Duroziez's sign.

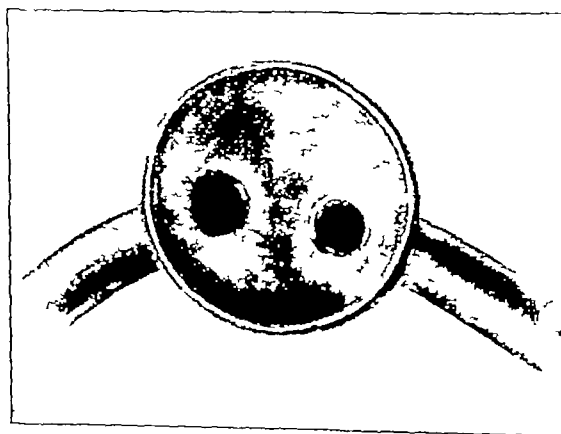


Fig. 1—The Peabody bell stethoscope. The well defined edges and the absence of a diaphragm facilitate the production of diastolic arterial murmurs.

They state that perception of Duroziez's sign on simple auscultation over the femoral artery by compressing it only with the aid of the stethoscope and without resorting to any other technique.

the artery peripheral to the site of auscultation. They also report that compression of the artery below the point auscultated by means of a pneumatic cuff inflated to arterial systolic pressure may elicit the sign in conditions other than aortic insufficiency. The mechanism of the sign, according to these authors, is the same in all conditions, the diastolic murmur being due to a diastolic reflux of blood backward toward the heart. They regard local conditions, particularly "hypotonicity of the arterial wall," indispensable to its production.

Duroziez's original description referred to observations over the femoral artery, but clinical usage has sanctioned the wider application of this sign to a dias-

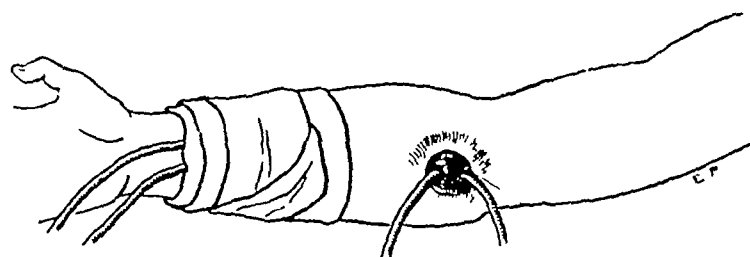


Fig. 2—The manner of applying pressure to the forearm distal to the point of auscultation. This procedure accentuates the diastolic arterial murmur of aortic insufficiency but diminishes or abolishes the diastolic arterial murmur of other conditions.

tolic murmur heard over any of the larger peripheral vessels when pressure is exerted on the artery by means of the stethoscope.<sup>6</sup> In the present communication the term "Duroziez's sign" is used in this wider sense. In some of our subjects, observations were made over both the brachial and the femoral arteries, in others, observations were confined either to the brachial or to the femoral blood vessels. We have used the Peabody bell stethoscope<sup>7</sup> (fig. 1) during the course of this investigation because it seemed most suited to the elucidation of the phenomena under investigation. The standard mercury sphygmomanometer was used in all the observations. For application of pressure to the forearm, a cuff 14 cm wide was used. A special cuff 20 cm in width was used in applying pressure to the thigh. All the observations recorded in this communication were checked by two observers.

#### OBSERVATIONS

Our observations demonstrate, we believe, that Duroziez's sign, a diastolic murmur heard over the larger arteries on pressure with the stethoscope, is heard in two entirely different types of conditions. The mechanisms by which the sign is produced in these two conditions are opposite in nature and can be differentiated with ease at the bedside by certain simple clinical tests.

*Patients with Marked Peripheral Vasodilatation*—In twelve of twenty consecutive patients with thyrotoxicosis (table 1), a definite diastolic murmur was heard over the brachial or femoral arteries by pressing on the vessel with a stethoscope. In other patients with arterial hypertension and with generalized arteriosclerosis and in patients with fever, the sign also was elicited. We believe that in these patients the diastolic arterial murmur was due to an increased forward flow of blood toward the periphery during diastole. Normally, the rate of blood flow through the arteries, arterioles and capillaries is greatest during systole and less during diastole. In patients with increased local blood flow associated with peripheral vasodilatation,

blood flow during diastole may be greatly increased and give rise to the diastolic murmur when the artery is stenosed by the stethoscope. The evidence for this concept is as follows:

1 If a stethoscope is placed over the brachial artery in the antecubital space and a blood pressure cuff is wrapped about the middle of the forearm above the wrist (fig. 2), inflation of the cuff to a pressure definitely below the diastolic level will completely abolish the diastolic murmur. Inflation of the cuff raises the pressure of the blood in the veins almost to the level of diastolic arterial pressure and so substitutes an artificial increase in the peripheral resistance for the low peripheral resistance of vasodilatation. The diastolic forward flow of blood is evidently more affected than the systolic forward flow of blood, for the diastolic murmur disappears and the systolic murmur diminishes somewhat in intensity. In conformity with these considerations, we have observed on numerous occasions that with the cuff inflated at a low pressure the diastolic murmur would disappear gradually in from ten to fifteen beats, while with pressures close to arterial diastolic the murmur would vanish in from one to three beats.

2 Simple immersion of the arm of the patient in cold water abolishes the diastolic murmur over the brachial artery quite as effectively as application of the blood pressure cuff. Immersion in hot water accentuates the diastolic murmur. Immersion of the arm up to a level some 15 to 20 cm below the area auscultated is sufficient to bring about these changes. The importance of local changes in the wall of the artery is, contrary to the opinion of others,<sup>8</sup> therefore negligible. The appearance and disappearance of the murmur under such circumstances is evidently related to the degree of peripheral vasodilatation, vasodilatation permitting a marked increase in diastolic blood flow, and vasoconstriction resulting in a marked decrease in diastolic blood flow. The close relation between the state of the smaller peripheral vessels and the presence of the diastolic murmur is further shown by the fact that in certain subjects, in whom the vasomotor system was irritable (flushing, sweating), the murmur showed considerable variation.

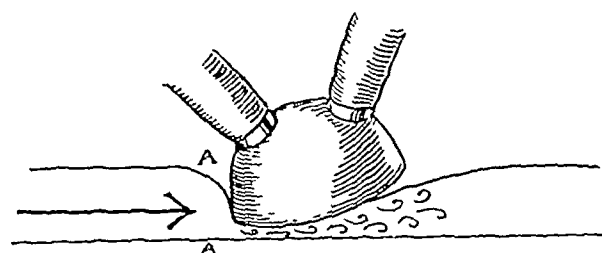


Fig. 3—The production of Duroziez's sign in subjects with pre-dominant vasodilatation. The arrow indicates the direction of blood flow toward the hand or foot during diastole. Pressure with the upper edge of the stethoscope is the most effective means of producing the eddy currents that give rise to the diastolic arterial murmur.

3 Immersion of the arms of normal subjects in hot water at 114 F or exposure to high room temperature causes peripheral vasodilatation and results in the appearance of a diastolic murmur over the brachial arteries similar in all respects to that heard in patients with spontaneous vasodilatation (table 1). As in the case of spontaneous vasodilatation, this murmur is readily diminished or abolished by application of sub-diastolic pressure to the forearm.

4 That the diastolic murmur is produced by a diastolic flow of blood forward toward the periphery is further shown by the fact that pressure on the artery

<sup>6</sup> White, P. D. *Heart Disease*, New York, Macmillan Company, 1931.  
<sup>7</sup> Manufactured by George P. Pilling and Son Company, Philadelphia.

predominantly with the upper edge of the stethoscope is far more effective in eliciting the sign than pressure with the lower edge of the stethoscope (fig 3). This is in accord with the widely accepted concept that murmurs are produced mainly by eddies in the current when the cross sectional diameter of the stream is suddenly increased. The eddy currents are produced mainly at *A* in figure 3 and give rise to a murmur immediately beneath the stethoscope. If the flow of blood were in the reverse direction, the situation would be as shown in figure 4. The eddy currents would be produced mainly at *B* beyond the area included by the bell of the stethoscope, and the murmur would be

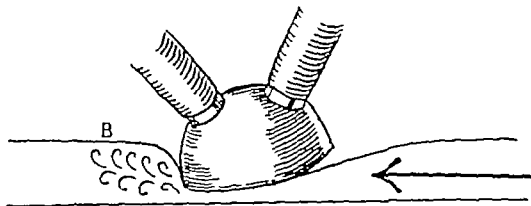


Fig 4—Production of the diastolic arterial murmur in peripheral vasodilatation by pressure with the upper edge of the stethoscope is inconsistent with a backward flow of blood during diastole. With pressure applied in this manner a backward flow of blood would give rise to eddy currents beyond the area included under the bell of the stethoscope and a diastolic murmur would be faint or inaudible.

fainter or inaudible. Actual observations substantiate these considerations.

5 In congenital phlebarteriectasis the blood flow of the affected extremity is greatly increased because of free artery to vein communications, and a diastolic murmur may be elicited by pressure with a stethoscope over the principal arteries. We recently studied a patient with this condition<sup>8</sup> and concluded that (a) there was a greatly increased blood supply to the extremity and (b) the diastolic murmur was due to an increased forward flow of blood during diastole.

6 The diastolic murmur tends to be transmitted toward the periphery rather than centrally. While the sign was produced in the antecubital fossa by one observer, the murmur was sometimes heard by a second observer over the radial, but not over the brachial artery. This is in accord with our concept, for arterial murmurs tend to be transmitted in the direction of blood flow.

*Patients with Aortic Regurgitation*—In patients with aortic regurgitation, the diastolic arterial murmur produced by pressure on the artery with the stethoscope sounds like that heard in other conditions. The mechanism of Duroziez's sign in patients with aortic regurgitation is directly opposite, however, to that of Duroziez's sign in subjects with other conditions. This is shown by the following tests:

1 If subdiastolic pressure is applied to the forearm or thigh while one listens over the brachial or femoral arteries the murmur, instead of disappearing, is strikingly accentuated (table 2). The rise in peripheral resistance resulting from the application of pressure favors the backward flow of blood.

2 The diastolic murmur is brought out or accentuated not by pressure with the upper edge but by pressure with the lower edge of the stethoscope (fig 5). In aortic insufficiency the direction of arterial blood flow in diastole is the reverse of that present in other subjects with Duroziez's sign and the technique of accentuating the murmur is the opposite.

3 In aortic regurgitation, simple immersion of the arm in cold water tends to accentuate the diastolic murmur. The peripheral resistance is increased and reflux of blood toward the heart during diastole is favored. This reflux<sup>9</sup> may be a result of structural changes in the semilunar valves or a result of relative insufficiency of the valves due to dilatation of the aortic ring.

4 Application of the blood pressure cuff inflated to subdiastolic pressure not only accentuates Duroziez's sign when already present in aortic insufficiency but in certain patients it will even cause the diastolic murmur to appear. In subjects in whom the arterial diastolic pressure is only 0 to 20 mm of mercury, a pressure of 20 to 30 mm may be applied instead of subdiastolic pressure.

#### COMMENT

The divergent views in regard to the significance of Duroziez's sign and the mechanism of its production are more easily understood on the basis of the foregoing observations. Duroziez's sign denotes a flow of blood in the artery beneath the stethoscope during diastole. By itself the sign does not tell whether the diastolic flow of blood is toward the periphery, as in subjects with peripheral vasodilatation and competent aortic valves, or backward toward the heart, as in aortic insufficiency. The direction of the diastolic flow, and hence the diagnostic significance of the sign, must be decided by application of subdiastolic pressure distal to the point of auscultation.

As might be expected, in patients with aortic insufficiency the effect of immersing the arm in hot water varies. In some subjects the diastolic murmur is accentuated, in others diminished, according to whether there is a predominance of the one factor, aortic insufficiency, favoring a reflux of blood, or a predominance of the other factor, vasodilatation, favoring a forward diastolic flow of blood.

Much of the discussion in regard to the clinical significance of capillary pulsation and Duroziez's sign has been due to the lack of knowledge concerning the physiologic mechanisms involved in the production of these signs. It has become increasingly apparent that

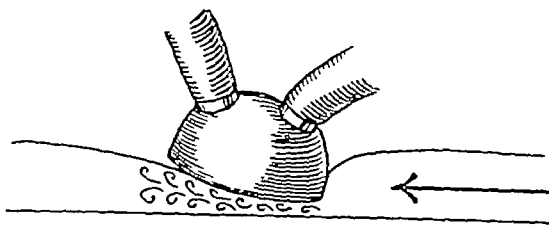


Fig 5—The production of Duroziez's sign in subjects with aortic insufficiency. The arrow indicates backward flow of blood toward the heart during diastole. Pressure with the lower edge of the stethoscope is the most effective means of producing the eddy currents which give rise to the diastolic arterial murmur beneath the bell of the stethoscope.

capillary pulsation is not necessarily associated with aortic reflux but is an expression of the local dilatation of the peripheral minute vessels.<sup>10</sup> As Lewis<sup>11</sup> states,

<sup>9</sup> Wiggers C J, Thoren Harold and Williams H A. Further Observations on Experimental Aortic Insufficiency. II. Cinematographic Studies of Changes in Ventricular Size and in Left Ventricular Discharge. *J Clin Investigation* 9: 215 (Oct.) 1930.

<sup>10</sup> Quincke H I. Leber Capillarpuls und centripetal Venenpuls. *Berl klin Wchnschr* 27: 265 1890. Gläesner, K. Klinische Untersuchungen über den Capillarpuls. *Deutsch Arch f klin Med* 97: 83 1909. Herz M. Der Puls der kleinsten Gefäße. *Wien Klin* 22: 165 1906. Lewis Thomas. Studies of Capillary Pulsation with Special Reference to Vasodilatation in Aortic Regurgitation and Including Observations on the Effects of Heating the Human Skin. *Heart* 11: 151 (April) 1924.

<sup>11</sup> Lewis Thomas. The Blood Vessels of the Human Skin and Their Responses. London: Shaw & Sons Ltd. 1927.

<sup>8</sup> Blumgart H I and Ernstene A C. Hemiparetic Hypertension and Congenital Phlebarteriectasis with Particular Reference to the Diastolic Murmur. *Arch f klin Med* 100: 10 (April) 1932.



“even in disease of the aortic valves the pulsation is much more dependent upon a strictly local condition of the blood vessels than upon change in the general arterial blood pressures arising out of the valve injury.” The presence of capillary pulsation must therefore be regarded as indicating peripheral vasodilatation in the part studied, but whether this vasodilatation is the

diastolic arterial murmurs than is at present possible in the case of capillary pulsation

SUMMARY AND CONCLUSIONS

1 Duroziez's sign, one of the so-called peripheral signs of aortic regurgitation, may be present in patients with competent aortic valves

TABLE 1—Observations on Duroziez's Sign in Subjects Without Aortic Insufficiency

Subject	Sex*	Age, Years	Diagnosis	Pulse Rate per Minute	Arterial Pressure		Capillary Pulsation	Duroziez's Sign				Comment†
					Systolic, Mm Hg	Diastolic, Mm Hg		Present	Brought Out by Hot Water	Subdiastolic Pressure Test		
										Pressure Applied, Mm Hg	Effect on Diastolic Murmur	
H D	♂	36	Thyrototoxicosis	94	124	68	+	+		40	Abolished	Basal metabolic rate +.06%
F J	♀	45	Thyrototoxicosis	112	116	74	+	+		60	Abolished	Basal metabolic rate +.68%
M R	♂	41	Thyrototoxicosis	90	128	82	+	0	+	40	Abolished	Basal metabolic rate +.81%
S C	♀	30	Thyrototoxicosis	120	134	88	+	+	+	60	Abolished	Basal metabolic rate +.39%
C F	♀	25	Thyrototoxicosis	124	108	72	+	+	+	40	Abolished	Basal metabolic rate +.35%
F S	♀	63	Thyrototoxicosis	100	150	86	+	0	+			Basal metabolic rate +.16%
A B	♀	53	Thyrototoxicosis	128	134	70	0	0				Basal metabolic rate +.94%
M B	♀	42	Thyrototoxicosis	128	126	62	+	+		60	Abolished	Basal metabolic rate +.26%
M V	♀	46	Thyrototoxicosis	120	112	56	+	0				Basal metabolic rate +.31%
A C	♀	45	Thyrototoxicosis	100	118	68	+	+		60	Abolished	Basal metabolic rate +.9%
F P	♀	19	Thyrototoxicosis	84	110	76	+	+		40	Abolished	Basal metabolic rate +.16%
R G	♀	14	Thyrototoxicosis	96	128	76	+	+				Basal metabolic rate +.17%
D M	♀	32	Thyrototoxicosis	80	116	64	+	+		60	Abolished	Basal metabolic rate +.1%
A D	♀	16	Thyrototoxicosis	134	126	74	+	0				Basal metabolic rate +.40%
M O	♀	41	Thyrototoxicosis	82	136	72	0	0				Basal metabolic rate +.11%
I L	♀	40	Thyrototoxicosis	82	140	74	0	0				Basal metabolic rate +.13%
H B	♀	40	Thyrototoxicosis	110	162	82	+	+	+	60	Abolished	Basal metabolic rate +.8%
I K	♀	30	Thyrototoxicosis	100	138	72	+	+		60	Abolished	Basal metabolic rate +.8%
M S	♀	48	Thyrototoxicosis	112	128	68	+	+		70	Abolished	Basal metabolic rate +.41%
S R	♀	50	Thyrototoxicosis	108	126	70	+	0				Basal metabolic rate +.20%
S T	♀	51	Chronic nephritis, hypertension	64	190	102	+	+	+			
L B	♀	32	Chronic nephritis, hypertension	96	256	144	0	0	+			
N F	♂	59	Generalized arterio sclerosis secondary anemia	92	98	42	+	+		40	Abolished	Oral temperature 100.2 F
I R	♀	48	Carcinoma of the colon	120	110	70	+	+		40	Abolished	Oral temperature 102.6 F
B M	♀	20	Normal	92	108	76	0	0	+	70	Abolished	
A E	♀	30	Normal	126	70	40	+	+		40	Abolished	Room temperature 80 F
B A	♀	23	Normal	76	120	84	+	+	+	80	Abolished	Room temperature 86 F
I R	♀	29	Normal	80	120	90	+	+	+	60	Abolished	Room temperature 86 F
D G	♀	30	Normal	100	110	70	0	0	+			Room temperature 86 F
B S	♀	23	Normal	76	120	82	0	0	+	60	Abolished	Room temperature 86 F
I M	♀	18	Normal	68	122	78	+	+	+	70	Diminished	Room temperature 86 F

\* In the tables, ♂ denotes male ♀, female

† The basal metabolic rates recorded were obtained, except in two instances, within one day of the time of making the observations on Duroziez's sign

TABLE 2—Observations on Duroziez's Sign in Subjects With Aortic Insufficiency

Subject	Sex	Age, years	Diagnosis	Pulse Rate per Minute	Arterial Pressure		Capillary Pulsation	Durozier's Sign		
					Systolic, Mm Hg	Diastolic, Mm Hg		Present	Subdiastolic Pressure Test	
									Pressure Applied, Mm Hg	Effect on Diastolic Murmur
H G	♂	27	Rheumatic heart disease	80	170	0	+	+	30	Increased
B A	♂	26	Rheumatic heart disease, subacute bacterial endocarditis	88	128	42	+	+	50	Increased
I S	♀	18	Rheumatic heart disease	84	122	30	+	+	60	Increased
L O	♀	20	Rheumatic heart disease	72	136	0	+	+	40	Increased
S N	♀	11	Rheumatic heart disease	126	122	0	+	0	60	Produced
M S	♀	44	Rheumatic heart disease	76	142	70	+	0	70	Not produced
P A	♀	20	Rheumatic heart disease	80	124	44	+	+	40	Increased
R C	♀	65	Syphilitic aortitis	92	108	60	+	+	70	Increased
G R	♀	72	Syphilitic aortitis	90	184	64	+	+	54	Increased
D M	♀	58	Syphilitic aortitis	76	174	46	+	+	40	Increased

result solely of local conditions (increased skin temperature) or whether it is a secondary consequence of aortic insufficiency cannot be ascertained on the basis of the sign alone. Similarly, Duroziez's sign as usually elicited simply denotes an increased blood flow in the artery beneath the stethoscope during diastole but does not indicate whether blood flow occurs in a forward direction because of preponderant vasodilatation or backward toward the heart because of aortic reflux. The tests we have outlined enable one to decide these questions and are of value in differentiating aortic insufficiency from other conditions. They permit one to attach greater diagnostic significance to peripheral

2 A study of Duroziez's sign has shown that it occurs in two entirely different conditions and that the two mechanisms producing the sign are opposite in nature and can be differentiated with ease at the bedside by certain simple clinical tests

3 In patients with preponderant peripheral vasodilatation (thyrototoxicosis, anemia, fever, normal subjects with increased local blood flow due to immersion of the limb in hot water) the diastolic arterial murmur is due to an increased forward flow of blood toward the periphery during diastole

4 In patients with aortic regurgitation, the diastolic arterial murmur elicited by pressure on the artery with

the stethoscope is similar to that heard in other conditions, but it is due not to a forward flow of blood but to a backward flow of blood during diastole toward the heart

5 In patients with aortic regurgitation the diastolic murmur may be strikingly accentuated by pressing predominantly with the lower edge of the stethoscope bell, by immersing the arm in cold water, or by applying a cuff inflated to subdiastolic pressure to the limb below the site of auscultation

6 In patients with preponderant peripheral vasodilatation the diastolic murmur is increased by pressure with the upper edge of the stethoscope, while the murmur is abolished by immersion of the limb in cold water or by application of subdiastolic pressure distal to the site of auscultation

7 Duroziez's sign as classically elicited simply denotes, therefore, an increased flow of blood in the artery beneath the stethoscope during diastole but does not indicate whether blood flow occurs in a forward direction toward the periphery because of preponderant vasodilatation or backward toward the heart because of aortic reflux. The tests we have outlined enable one to decide these questions and are of value in differentiating aortic insufficiency from other conditions

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## DIABETIC OR MYCOTIC VULVOVAGINITIS

### PRELIMINARY REPORT

H C HESSELTINE, M D  
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According to gynecologic textbooks monographs and articles,<sup>1</sup> diabetic genital pruritus and vulvovaginitis are produced by dextrose or other substances in abnormal amounts in the urine. However, the following observations indicate that *Eumycetes* (fungi) are in most instances the etiologic agent, which is in accord with the statement by Plass, Hesselstine and Borts<sup>2</sup> that "pregnancy and diabetes are predisposing factors" for such infection. Although the reasons for this predilection are not completely known, it is obvious that with the constant spill of excessive dextrose over the vulva a satisfactory medium is created, especially since students<sup>3</sup> in this field have shown that the pathogenic yeasts thrive on dextrose and levulose in the presence of acid.

While the proponents of urinary irritants are supported in their view by local improvement simultaneously with control of the diabetic state, I believe that the fungi cease producing symptoms because of an inadequate medium (cessation of glycosuria). Genital

mycoses explain more readily why pruritus and vulvitis continue in some individuals in spite of diet and insulin or why fungicidal therapy alone completely cures the genital disease.

The clinical appearance of yeast infections of the vulva have been described by Plass and his co-workers.<sup>2</sup> Briefly, the tissues are reddened and are usually edematous, sometimes covered with thrush patches caseous material or again only with an excessive discharge. The leukorrhea not infrequently contains

TABLE 1—New Diabetic Patients with Pruritus

	Fungi		Total
	Present	Absent	
With glycosuria	15	0	15
With no glycosuria	3	3	6
Total	18	3	21

minute flakes and sometimes bubbles. If the disease is of long duration, the skin of the labia and groin may be reddened, or thickened, roughened and "bronzed." Not infrequently, excoriations or localized desquamation are observed, the former may be the result of local tissue sensitization or toxic necrosis, while the latter is caused by the extensive scratching. With such pathologic tissue changes, an ample portal of entry is available for staphylococci, streptococci, certain diplococci, or other bacteria which may grow in the presence of these yeasts. The symptoms of itching and local discomfort may vary from a mild to a most distracting and sleep disturbing complication.

Since typical thrush patches are less often present and direct smear of the vulvovaginal discharge and lesions may not reveal the presence of mycelia (hyphae) and conidia, cultures are without question the most reliable diagnostic procedure.<sup>4</sup> The treatment consists of semiweekly vulvovaginal application of 1 per cent gentian violet (in an aqueous or glycerin vehicle) or of diluted iodine solution, and daily 1 per cent sodium bicarbonate vaginal douches.<sup>2</sup>

### OBSERVATIONS, EXPERIMENTS AND COMMENT

This study included only those diabetes mellitus patients who had genital itching or infection. The age incidence varies from 12 to the late seventies. Two of

TABLE 2—Yeast—Classified\*

Saccharon yeasts	1
Cryptococcus	1
Endomyces	6
Monilia	1
Yet undetermined	1
Lost	1

\* This includes only those cultures collected at the University of Chicago.

the younger patients had not menstruated, yet their development was such that menstruation could be expected at any time. Table 1 shows that in eighteen of the twenty-one cases fungi were present. In one of the three negative cases the patient had applied a heavy ointment which interfered with the obtaining of a satisfactory culture and unfortunately she has not

4 Hesselstine H C, Plass E D and Bort I H. Pathogenicity of the Monilia (Castellani) Vaginitis and Oral Thrush to be published.  
5 The material for this study was obtained through the courtesy of the following departments of medicine and men therein: 1 University of Iowa, even cases F M Smith and C W Baldridge (taken from the tables of Plass Hesselstine and Borts); 2 University of Chicago (Oden) six cases Louis Lenter and H L Schmitz; 3 University of Chicago (Ruch) eight cases R T Woodruff and L K Campbell.

From the Department of Obstetrics and Gynecology the University of Chicago.

This study was supported in part by funds from the Josiah Macy Jr Foundation.

1 Anspach D M. Gynecology ed 3 Philadelphia J B Lippincott Company 1927 p 170. Crossen H S and Crossen R J. Diseases of Women ed 2 St Louis C F Mosby Company 1930 p 268. Crane W P. Gynecology ed 4 Philadelphia W B Saunders Company 1934 p 262. Long Margaret and Downie Evelyn. Pruritus Vulvae in Relation to Intermittent Glycosuria M J Australia 1 721 (June 15) 1931. Miller C J. An Introduction to Gynecology. St. Louis C V Mosby Company 1931 p 107. Polak J O. Pelvic Inflammations in Women vol 9 Gynecological and Obstetrical Monographs New York D Appleton & Co 1931 p 9. Rubin I C. Symptoms in Gynecology, Etiology and Interpretation vol 3 Gynecological and Obstetrical Monographs 1 20. Tausch E I. Diseases of the Vulva vol 13 Gynecological and Obstetrical Monographs 1 210.  
2 Plass E D, Hesselstine H C and Bort I H. Monilia Vulvovaginitis Am J Obstet Gynec 21 20 (March) 1931.  
3 Caella A. J. T. Med 27 101138 (May 1) 1920.  
4 Lenter Louis. Manual of Tropical Medicine 10th ed New York Williams & Wilkins Co 1920 p 109.  
5 Hesselstine

been accessible for further study. Yeasts were found in all the fifteen glycosuric patients.

The yeasts so far identified belong to the genera *Saccharomyces*, *Cryptococcus*, *Endomyces* and *Monilia*. Table 2 gives the distribution and indicates that *Endomyces* is the most frequent offender. The fermentation reactions are employed for further identification in each genus, but they will be reported in a separate communication. However, these organisms behave much like those yeasts which were used<sup>6</sup> in demonstrating pathogenicity through human inoculation.

If dextrose is the etiologic agent of diabetic vulvitis, one must explain the absence of symptoms in so many diabetic patients with considerable spill of dextrose. Furthermore, diabetic children would be prone to have this disease, since their tissues are not so resistant, yet they rarely suffer from the condition called "diabetic vulvitis." This observation likewise agrees with the rareness of vulval mycoses before the adolescent period. In all likelihood, the less acid reaction of the vulvo-vaginal secretion in girls is equivalent to a prophylactic state. If it is dextrose in the urine that causes the vulvitis, one should be able to reproduce experimentally a "diabetic vulvitis" in normal individuals by bathing the external genitalia with such a solution. According to Hawk and Bergeim,<sup>6</sup> a 10 per cent concentration is unusual and 100 Gm an infrequent twenty-four hour output of dextrose. Then, by using 250 cc of a 10 per cent solution at 6 and 10 a. m. and 2, 6 and 10 p. m. as a vulval wash (simulating a micturition), both the concentration and the amount of the monosaccharide are comparable to a very severe diabetic state.

Table 3 gives the results obtained in six patients, one of whom had a yeast present. This group received no vulval manipulation or treatment and was under our constant observation. In the first five no symptoms or clinical evidence of irritation developed, but in the sixth patient (fungi present) seven vulval washes converted a very mild itching into an acute severe vulvitis, which persisted for one week, when fungicidal therapy promptly cured it. Heretofore, the associated recurrence of the genital disease and glycosuria seemed to indicate the etiologic agent, but from the foregoing observation it is not difficult to understand how a symptom free carrier of pathogenic fungi (which may be for months) may have the reappearance of the pruritus and vulvitis whenever the environment favors a mycosis.

If diabetic vulvitis is a mycosis and since such organisms are transmitted occasionally by sexual congress,<sup>7</sup> a few of the husbands should present evidence of an infection. In this group, two patients stated voluntarily that their husbands had a temporary irritation of the phallus following each coitus. This certainly might be a transient fungous infection, since the repetition of this reaction was lost with the relief of the vulval symptoms (neither husband was accessible for examination).

Possibly other substances in the urine are direct etiologic agents, but in this series there is not a consistent relationship of acetone and diacetic acid to the symptomatology.

Even though this series is not large enough to warrant conclusions, certain impressions exist:

1 Diabetic vulvovaginitis is an infection, usually mycosis and rarely, if ever, an irritation from product in the urine.

2 Glycosuria supplies an adequate medium for vulval mycosis.

3 Fungicidal therapy cures "diabetic" pruritus and vulvitis.

4 Synthetic glycosuria does not produce pruritus or vulvitis.

#### CONCLUSIONS

Even though this series is not large enough to warrant conclusions, certain impressions exist:

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2 Glycosuria supplies an adequate medium for vulval mycosis.

3 Fungicidal therapy cures "diabetic" pruritus and vulvitis.

4 Synthetic glycosuria does not produce pruritus or vulvitis.

### THE USE OF FRESH HUMAN SERUM (COMPLEMENT) IN MENINGOCOCCUS MENINGITIS

#### REPORT OF A CASE

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In 1908 the successful treatment of ten out of sixteen cases of acute meningococcus meningitis by means of fresh human serum (without the addition of antiserum), given intraspinally was reported by McKenzie and Martin.<sup>1</sup> They used normal, convalescent and patients' serums and extended their study by showing that each serum, *in vitro*, exerted a meningococidal power by means of a thermolabile constituent. In 1916, Fairley and Stewart<sup>2</sup> added fresh human (convalescent) serum to antimeningococcus serum before intraspinal administration and reported seven recoveries out of ten acute

#### Agglutinating Titers of Six Samples of Serum

		Agglutination Tests    Type II* Meningococcus								
Antiserum		Designation	1 4	1 8	1 16	1 32	1 64	1 128	1 256	1 512
N Y State 382	A	++++	++	++	++	+	±	±	—	—
N Y State 303	B	++++	++	++	++	+	±	—	—	—
N Y State 318	C	++	++	++	+	+	—	—	—	—
Commercial	D	+	+	+	±	±	±	—	—	—
Commercial	E	+	+	+	±	±	±	—	—	—
Commercial	F	++	++	++	+	+	±	—	—	—

\* The suspension consisted of fresh organisms obtained from culture of the patient's spinal fluid. The tubes were incubated at 56 C. for two hours and then read.

cases thus treated. Two years later Kolmer and his associates<sup>3</sup> showed by well controlled experiments that the addition of normal active human or guinea-pig serum to antimeningococcus serum definitely increased

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<sup>1</sup> McKenzie I. and Martin W. B. M. Serum Therapy in Cerebrospinal Meningitis. *J. Path. & Bact.* 12: 539, 1908.

<sup>2</sup> Fairley N. H., and Stewart C. A. Cerebrospinal Fever, Quarantine Service, pub. 9 Commonwealth of Australia, 1916.

<sup>3</sup> Kolmer J. A., Toyama I., and Matsunami T. Influence of Active Normal Serum (Complement) upon Meningococci. *J. Immunol.* 3: 157-199 (May) 1918.

<sup>6</sup> Hawk, P. B., and Bergeim, Olaf. *Practical Physiological Chemistry*, ed. 10. Philadelphia: P. Blakiston's Son & Co., 1931, p. 745.

<sup>7</sup> Castellani, Aldo. *Fungi and Fungous Diseases* (Adolph Gehrmann Lectures of the University of Illinois College of Medicine, 1926, p. 139). *Arch. Dermat. & Syph.* 16: 383 (Oct.), 571 (Nov.), 714 (Dec.) 1927, 17: 61 (Jan.), 194 (Feb.), 354 (March) 1928.

its opsonic and to a lesser extent its bactericidal activity Dr Kolmer<sup>4</sup> has informed us of five unreported cases of the successful clinical application of this principle. However, the literature of the last fifteen years has given no serious consideration to this addition in the serotherapy of meningococcus meningitis. Accordingly, it seems worth while to report the following illustrative case.

## REPORT OF CASE

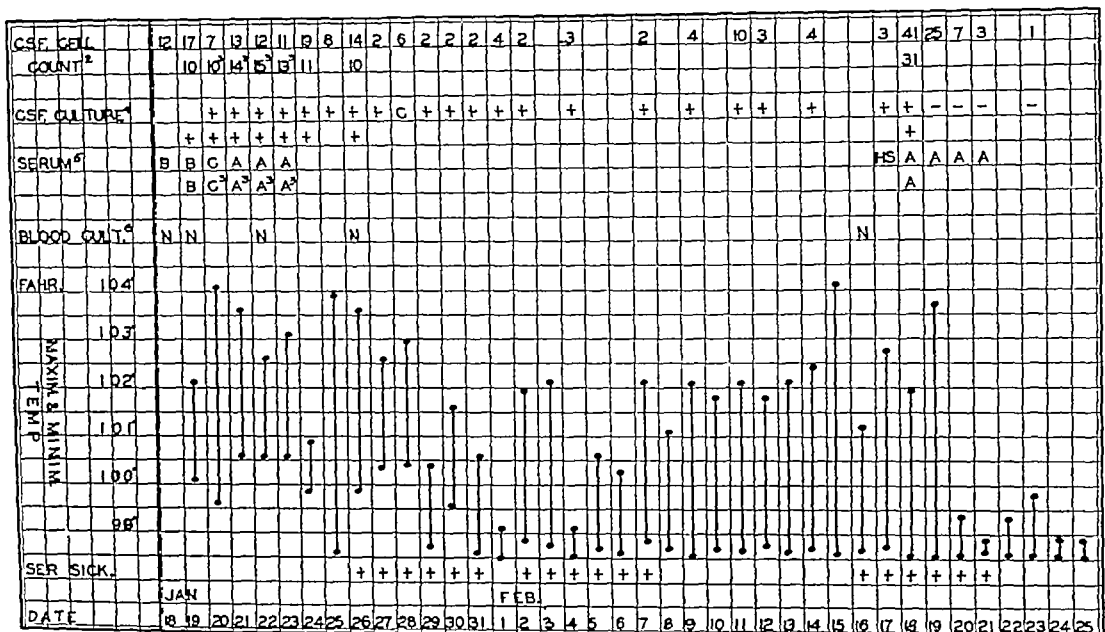
A white girl, aged 8½ years, admitted to the New Haven Hospital, Jan 18, 1932, complained of fever, stiff neck, and pain in the left ear. The past history was irrelevant. The present illness was ushered in suddenly on January 14 with a chill, fever and pain in both arms. The next day headache developed, the fever persisted, and toward evening the child became delirious. On the third day the delirium was gone, while the other symptoms remained. On the fourth day there were epigastric pain and vomiting, and on the fifth day the patient was admitted with a temperature of 104 F, pulse 80 and respirations 24 per minute. The child appeared acutely and seriously ill drowsy but not comatose. There was moderate dehydration. No

petechiae could be detected. There was no tenderness of the sinus or mastoid. The tick of a watch was heard 24 inches from either ear. Herpes labialis was noted as well as several small vesicles on the hard palate, on the tongue and on the skin in the nuchal region. The neck was very rigid both to flexion and to rotation. A bilateral Kernig's sign was obtained. The superficial and deep reflexes were normal and equal. There were no other noteworthy physical manifestations. By lumbar puncture 30 cc. of cloudy fluid was removed and 20 cc of New York state anti-meningococcus serum (lot B)<sup>5</sup> was introduced. Gram negative intracellular and extracellular diplococci were seen on direct smear of the spinal fluid, and meningococci type II (Gordon)<sup>6</sup> were recovered from culture. A record of the subsequent spinal and cisternal taps is given in the accompanying chart, together with serum administrations (showing route and lot used), maximum and minimum daily temperatures, blood cultures and the occurrence of serum sickness. It should be added that only from the first sample of spinal fluid were we able to detect meningococci on direct smear.

Despite the fact that all the symptoms disappeared during the following week and marked clinical improvement was noted daily, spinal taps gave persistently positive cultures. We found it advisable therefore, to resort to other serums. As is shown in the table six different samples were tested and the one of highest agglutinating titer (A) was chosen for further use.

Our renewed efforts met with no success; the cultures remained positive and since the child was symptomless (though not afebrile) serotherapy was discontinued January 24 as indicated in the chart.

This method of management was soon abandoned, however, as the disease began to follow a distinctly unfavorable course. By February 16, the temperature and cerebrospinal fluid cell count had been gradually rising. Kernig's sign was positive, the neck was rigid, the optic disks were blurred and the patient had vomited several times. February 17, 15 cc of fresh normal human serum was administered intraspinally. February 18, we resumed the use of antiserum (A), after slowly desensitizing the patient. The spinal fluid on February 19 gave no growth after twenty-four hours' incubation. Serotherapy was discontinued, following three successive negative cultures. The thecal fluid remained sterile on all subsequent examinations. It should be recorded that one hour following the first of the renewed injections (antiserum A) there developed swelling of the face, cyanosis of the lips, hoarseness, generalized urticaria and occasional vomiting, all of which were relieved by epinephrine injected subcutaneously. February 23, it was discovered that the patient could not hear the tick of a watch held 1 mch from her left ear. March 3, Kernig's sign was negative, the disks were blurred and the spinal fluid pressure was 200 mm of water, the jugular compression causing it to rise to 600 mm. The rest of the patient's course was uneventful. The fundi cleared, the temperature remained normal and the patient was



Observations from January 18 to February 25. 2 cerebrospinal fluid cell count given in hundreds of cells. 12 = 1200 white blood cells per cubic millimeter. 3 cisternal tap and cisternal serum administration. 4 + = meningococci, on culture —, no growth. C contamination. 5 agglutinating titer of A B C is given in the table when two letters appear two intrathecal injections were given that day each injection consisted of 20 cc. HS, human serum. 6 N = negative blood culture. Ser Sick. = serum sickness.

discharged, March 18. The child was examined again two weeks after discharge. Her hearing had completely returned, and she was found to be normal in every respect.

## COMMENT

The features that deserve special emphasis in this case are:

- 1 The long duration of positive spinal fluid cultures (up to the thirty-sixth day) despite the use of an antiserum of good agglutinating titer.

- 2 The apparent paradox of distinct clinical improvement during a number of days while meningococci were being recovered from the spinal fluid.

- 3 The use of fresh normal human serum (complement) followed by two injections of antiserum with immediate sterilization of spinal fluid.

It is beyond the scope of this paper to enter into a theoretical discussion on the probable explanation of how a patient with meningococci in the spinal fluid could present a picture of comparative well being. We

<sup>4</sup> Kolmer, J. A. Letter to the author.  
<sup>5</sup> We are indebted to Dr. W. A. North of the New York State Board of Health for his kindness in furnishing the anti-serum.  
<sup>6</sup> Typed by Dr. Lake of the Rockefeller Institute, whose cooperation we gratefully acknowledge.

find it compelling to mention, however, that Hadley<sup>7</sup> in his discussion on microbic dissociation, reviews the work of a number of investigators who have shown that a variety of different organisms, when grown in their homologous antisera, undergo dissociation and lose their virulence though they retain their capacity to grow abundantly on cultures.

It may be of interest to record here the observations that led us to the use of complement as an activating agent of antimeningococcus serum. Ward and Wright,<sup>8</sup> in studying influenzal meningitis, observed that the spinal fluid of their patients contained no complement. The available anti-influenzal serum showed in vitro practically no bactericidal properties unless guinea-pig or human serum was added. It therefore occurred to them to add complement to the influenzal antiserum for therapeutic use.

In examining our patient's spinal fluid prior to administration of human serum (February 16) we found that the smallest detectable trace of complement was present in 2 cc. That is to say, in a hemolytic system consisting of 1 unit of antigen (sheep red blood cells) and 2 units of amboceptor (sensitized rabbit's serum), complete hemolysis occurred on the addition of 4 cc of cerebrospinal fluid, a trace of hemolysis with 2 cc and no hemolysis with 1 cc or less.<sup>9</sup> Thus, while some complement had already been present in the spinal fluid of our patient we felt that the amount was so small that there might be an advantage gained by adding human serum. Furthermore, we incubated meningococci recovered from our patient together with

- 1 Antiserum (A)
- 2 Antiserum (A) plus fresh human serum
- 3 Antiserum (A) plus heated human serum

and twenty-four hours later poured each tube on ascitic broth plates. Tubes 1 and 3 gave a luxuriant growth, while tube 2 clearly showed a marked inhibition of growth.

However, from the in vitro results alone, we are not prepared to offer an explanation of the mechanism responsible for the sterilization of our patient's spinal fluid. Certain necessary facts are lacking. We have not determined the amount, if any, of complement present in the spinal fluid during the first series of antiserum injections, nor did we actually establish the fact that twenty-four days after these injections were discontinued (i. e., when the human serum was added) no antiserum remained in the spinal fluid. We merely know that on February 16 there was but a trace of complement present and that after considerable complement (15 cc of human serum) plus antimeningococcus serum had been added and the spinal fluid sterilized, no free complement could be detected. Finally, aside from these immunologic reactions there remains undetermined what rôle the nonspecific protein reaction of February 18 played in the sterilization of the spinal fluid on February 19.

#### CONCLUSION

While the results of the thirty-one cases referred to in this paper in footnotes 1, 2 and 4, together with our single case, do not warrant any sweeping conclusions, it seems justifiable to suggest that when a case of meningococcus meningitis is resistant to an antiserum that agglutinates the recovered organism satisfactorily,

the addition of fresh normal or convalescent human serum to the antiserum be tried before more radical procedures are instituted.

The exact proportions of the two serums have as yet not been established. In the future in cases similar to the one described here we expect to add 5 cc of fresh human serum to 15 cc of antimeningococcus serum.

#### SUMMARY

In a case of meningococcus meningitis, antiserum therapy was followed by clinical improvement but did not sterilize the spinal fluid. After twenty-eight successive positive cultures, fresh normal human serum was administered intraspinally, followed by additional antiserum, with immediate sterilization of the cerebrospinal fluid.

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### TOXICITY AND PHYSICAL PROPERTIES OF NEOARSPHENAMINE OF DIFFERENT MANUFACTURE

A COMPARATIVE STUDY OF THE TOXICITY AND  
THE TRYpanOCIDAL AND SPIROCHETICIDAL  
PROPERTIES, WITH THE ADVISABILITY  
OF ESTABLISHING STANDARDS OF  
CURATIVE ACTIVITY

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It is generally recognized that neoarsphenamine prepared by different laboratories is more likely to vary in parasitocidal or curative activity than arsphenamine. For this reason the treatment of syphilis with neoarsphenamine may involve the regrettable error of employing a compound below the average in curative activity and therefore requiring some laboratory check on standard of spirocheticidal activity similar in principle to the standards established by the federal government in relation to toxicity.

This variation in the parasitocidal activity of neoarsphenamine, prepared by different laboratories and indeed observed to some extent in different lots prepared in the same laboratory, has been best detected by means of trypanocidal tests which yield rather sharply defined results capable of eliciting even minor differences in compounds. Unfortunately, however, the results of tests for spirocheticidal activity in the treatment of experimental syphilis of rabbits are less well defined, although still capable of detecting somewhat grosser variations in curative activity.

Since trypanocidal tests employing rats infected with *Trypanosoma equiperdum* are quickly and cheaply conducted, we have long considered the advisability of employing them as a measure of the curative activity of neoarsphenamine in the treatment of syphilis. Of course a decision on so important a matter depends on whether or not there is a sufficiently accurate relationship between the trypanocidal and spirocheticidal properties of the compound being tested and the purpose of the present investigation was a further study of the spirocheticidal activity of neoarsphenamine of various manufacture in the treatment of rabbit syphilis in relation to its trypanocidal activity.

<sup>7</sup> Hadley, Philip. Microbic Dissociation, *J. Infect. Dis.* **40**: 1312 (Jan.) 1927.

<sup>8</sup> Ward, H. K. and Wright, J. Problems of Specific Therapy in Influenzal Meningitis, *J. Exper. Med.* **55**: 223 (Feb.) 1932.

<sup>9</sup> Each tube was controlled with heated spinal fluid.

About six years ago we thought that the results of a small series of comparative trypanocidal and spirocheticidal tests with arsphenamine and neoarsphenamine justified the assumption that, in a broad and general manner, lots of neoarsphenamine unusually low in trypanocidal activity were likewise below the average in spirocheticidal activity and that the trypanocidal test offered a fairly reliable and ready method for roughly estimating the curative activity of the trivalent arsenical compounds employed in the treatment of syphilis.<sup>1</sup> At that time, however, exceptions were noted, especially since it was observed that a lot of neoarsphenamine may be unusually high in trypanocidal activity while showing only an average degree of spirocheticidal activity.

During the past two years we have reinvestigated the subject by determining the toxicity and the trypanocidal and spirocheticidal properties of eighteen samples of neoarsphenamine prepared by seven different laboratories, and the results are herein briefly summarized. Some of these compounds were donated by the respective laboratories while others were purchased on the open market, so that we believe the results are acceptable and indicative of the toxicity and parasiticidal properties of neoarsphenamine of different manufacture available at the present time.

#### METHODS EMPLOYED

The toxicity of each compound was determined by intravenous injection into white rats according to the method established by the National Institute of Health (formerly the Hygienic Laboratory). Each compound was tested in doses varying from 0.150 to 0.350 Gm per kilogram of weight, according to the official or standard technic, and the tests were repeated when the results were variable and inconclusive. The amounts shown in the accompanying table represent approximately the largest single doses per kilogram of weight tolerated for a period of seven days and are designated as the maximum tolerated doses.

The trypanocidal tests were conducted with white rats infected with *T. equiperdum* according to the Kolmer method<sup>2</sup> in which treatment was given twenty-four hours after intraperitoneal inoculation. Each compound was employed in a large series of rats in doses varying from 0.001 to 0.012 Gm per kilogram of weight. The amounts shown in the table are approximately the smallest single doses per kilogram of weight by intravenous injection effecting complete sterilization, as determined by daily examination of the tail blood over a period of three weeks, and designated as the minimal trypanocidal doses.

The spirocheticidal tests were conducted with rabbits inoculated intratesticularly with the Nichols-Hough strain. Treatment was started after the development of acute orchitis showing numerous actively motile spirochetes by dark field examination. Each compound was tested in doses varying from 0.010 to 0.020 Gm per kilogram of weight two rabbits being tested with each dose. In the accompanying table are shown the approximate smallest single doses per kilogram of weight capable not only of dissipating and healing the testicular lesions but likewise of effecting complete sterilization of the inguinal lymph glands as determined by transfer to fresh animals and designated as the minimal spirocheticidal doses.

After injection of the compounds, dark field examinations of the testicular lesions for spirochetes were made at frequent intervals to determine approximately the number of days required for the disappearance of the parasites.

Wassermann reactions by the Kolmer method<sup>3</sup> were conducted just before and at weekly intervals after treatment for eleven weeks to determine approximately the time required for single doses to yield negative reactions. This method is so designed as to avoid the nonspecific positive reactions sometimes yielded by normal rabbit serum. All animals yielded strongly positive specific reactions at the height of the acute syphilitic orchitis before treatment was instituted, and in the table are shown the average number of days required by different animals receiving the same dose of the respective compounds for reversal to negative reactions over a period of eleven weeks.

*The Toxicity and the Trypanocidal and Spirocheticidal Activity of Eighteen Lots of Neoarsphenamine Prepared by Seven Laboratories. The Curative Effects in Acute Testicular Syphilis of Rabbits*

Compound	Maximum Tolerated Dose Gm per Kg	Minimal Trypanocidal Dose Gm per Kg	Minimal Spirocheticidal Dose Gm per Kg	Positive Dark Field Examination Days	Days Required for Healing of Testicular Lesions	Days Required for Negative Wassermann Reaction
D 1	0.300	0.006	0.020	3-4	6-7	28
D 2	0.300	0.004	0.020	3-4	7-9	About 28
D 3	0.300	0.004	0.020	3-4	6-7	21 to 35
M 1	0.250	0.004	0.020	4-6	7-9	14 to 21
M 2	0.300	0.004	0.020	3-4	7-8	21 to 28
M 3	0.300	0.006	0.020	3-4	7-8	14 to 28
G 1	0.200	0.006	0.020	3-4	6-7	21 to more than 77
G 2	0.300	More than 0.012	0.020	3-4	6-7	28 to 35
G 3	0.300	More than 0.012	More than 0.020	8-10	7-9	28 to 42
S 1	0.200	More than 0.012	More than 0.020	11-15	10-11	28 to 49
S 2	0.250	More than 0.012	0.020	9-11	14	35
S 3	0.250	0.012	0.020	3-5	6-7	42 to 60
C 1	0.200	0.004	0.020	4-5	7-9	21 to 49
C 2	0.200	0.004	0.020	3-4	6-7	21 to 28
C 3	0.250	0.006	More than 0.020	10-15	7-8	35 to 56
B 1	0.250	0.006	0.020	3-4	7-9	21 to 28
B 2	0.200	0.004	0.020	3-4	7-9	28 to 42
P 1	0.200	0.004	More than 0.020	7-11	10-11	49 to more than 77

#### RESULTS

**Toxicity**—The maximum tolerated doses of the eighteen compounds varied from 0.200 to 0.300 Gm per kilogram of weight, as shown in the accompanying table. With a few of the compounds, doses as high as 0.350 Gm per kilogram were tolerated for from two to five days, but those shown in the table are the largest amounts tolerated for at least seven days. As the National Institute of Health requires that 60 per cent of rats shall tolerate a dose of at least 0.240 Gm per kilogram for seven days, it is interesting to note that five of the compounds tested fell below this minimum standard of toxicity.

**Trypanocidal Activity**—The minimal trypanocidal doses varied from 0.004 to more than 0.012 Gm per kilogram of weight. In no instance were doses less than 0.004 Gm completely trypanocidal, and amounts higher than 0.012 Gm were not employed.

With the majority of the eighteen compounds tested the minimal trypanocidal doses ranged from 0.004 to 0.006 Gm per kilogram which corresponds very closely to the results observed by Schamberg, Kolmer and

<sup>1</sup> Kolmer, J. A. Chem. Ther. with Special Reference to the Treatment of Syphilis. Philadelphia: W. B. Saunders Company, 1926, p. 32.  
<sup>2</sup> Kolmer, J. A. Chem. Ther. with Special Reference to the Treatment of Syphilis. Philadelphia: W. B. Saunders Company, 1926, p. 32.

<sup>3</sup> Kolmer, J. A. Serum Diagnosis by Complement Fixation. Philadelphia: Lea & Febiger, 1928, p. 415.



Raiziss<sup>4</sup> in 1920, who found at that time that the average minimal trypanocidal dose of neoarsphenamine prepared by six different laboratories, including the German product, was approximately 0.004 Gm per kilogram of weight. It is interesting to note, however, that the minimal trypanocidal dose of one compound was as high as 0.008 Gm per kilogram, while four compounds, or approximately 22 per cent, of the eighteen tested were not completely trypanocidal in a dose as high as 0.012 Gm per kilogram. Two of these compounds were prepared by one laboratory and the other two by a second laboratory. Compounds prepared by the remaining five laboratories showed minimal trypanocidal doses varying from 0.004 to 0.008 Gm per kilogram, but it would appear that the average minimal trypanocidal dose of neoarsphenamine prepared at the present time is from 0.004 to 0.006 Gm per kilogram of weight according to the method employed.

*Spirocheticidal Activity*—None of the eighteen compounds were completely spirocheticidal in doses of 0.010 and 0.015 Gm or less per kilogram of weight. Fourteen of them were completely spirocheticidal in the dose of 0.020 Gm per kilogram, and this would appear to be approximately the average minimal spirocheticidal dose of neoarsphenamine available at the present time. Tests were not conducted with doses between 0.015 and 0.020 Gm per kilogram, possibly the minimal curative doses of some would have been found somewhat less than 0.020 Gm, but we considered differences of 0.005 Gm per kilogram sufficiently close for these spirocheticidal tests. It is significant, however, that four, or approximately 22 per cent, of the compounds were not completely spirocheticidal in doses of 0.020 Gm per kilogram, since the lymph gland transfers to fresh animals yielded positive results.

It is interesting to note that two of these four compounds below the average in spirocheticidal activity were likewise much below the average in trypanocidal activity (S 1 and G 3), G 2 however, while much below the average in trypanocidal activity, showed the average spirocheticidal activity, while just the reverse was observed with P 1, which was highly trypanocidal but below the average in spirocheticidal activity.

As a general rule, dark field examinations of the acute testicular lesions were negative for *Spirochaeta pallida* in from three to five days after the intravenous injection of 0.020 Gm per kilogram of weight, this was observed with thirteen, or approximately 72 per cent, of the eighteen compounds examined. With the remaining five, or approximately 28 per cent, at least seven to fifteen days was required. Four of these (G 3, S 1, C 3 and P 1), which were not completely spirocheticidal in a dose of 0.020 Gm per kilogram, required from seven to fifteen days, while one (G 2), which was completely spirocheticidal in doses of 0.020 Gm but not trypanocidal in doses of 0.012 Gm, required only the usual period of from three to four days.

As a general rule, the syphilomas were completely healed in from six to eleven days after the injection of 0.020 Gm per kilogram of weight. Doses of 0.015 Gm per kilogram caused healing in about the same period of time, and indeed doses as low as 0.010 Gm per kilogram produced healing in from six to fourteen days. It is apparent, therefore, that the rapidity of disappearance of spirochetes and the rate of healing of the acute testicular lesions are not acceptable as criteria of the curative activity of neoarsphenamine but that

lymph gland transfers to the testicles of fresh animals are required for determining the minimal curative doses.

*The Wassermann Reaction as an Index of Spirocheticidal Activity*—As previously stated, all the animals showed moderately to very strongly positive Kolmer-Wassermann reactions varying from 31 --- to 44444 before treatment was given.

None of the eighteen compounds produced negative reactions in doses of 0.010 Gm per kilogram over a period of eleven weeks, or seventy-seven days.

Nine, or 50 per cent, of them, however, produced negative reactions within this period after a dose of 0.015 Gm per kilogram. As the tests were not conducted after the eleventh week, we cannot state whether or not any of these would have subsequently yielded positive reactions, but this is quite likely in view of the fact that the lymph gland transfers on all these animals gave positive results, thereby indicating the persistence of infection.

Sixteen, or approximately 90 per cent, of the compounds produced negative reactions within from fourteen to fifty-six days after the intravenous injection of 0.020 Gm per kilogram of weight. The remaining two lots (G 1 and P 1) produced negative reactions in from twenty-one to forty-nine days in some rabbits receiving this dose, while in others the reactions remained persistently positive up to and including the eleventh week. One of these (G 1) was apparently completely spirocheticidal in doses of 0.020 Gm per kilogram and indicated either that the lymph gland transfers gave falsely negative results and failed to detect surviving spirochetes or that the complement-fixing reagin persisted in the blood over an unusual period of time. The other (P 1) was not completely spirocheticidal in doses of 0.020 Gm per kilogram, so that the persistently positive Kolmer-Wassermann reactions were probably due to the persistent infection.

According to these results it would therefore appear that complement-fixing antibody tends to disappear from the blood of rabbits with acute syphilitic orchitis in from two to eight weeks after the intravenous injection of 0.020 Gm of neoarsphenamine per kilogram of weight but that the reactions may be at least temporarily negative after doses of 0.015 Gm per kilogram, which are not completely spirocheticidal. Under these conditions it would appear that negative complement-fixation reactions cannot be accepted as criteria of cure in rabbit syphilis unless persistently negative for more than eleven weeks.

#### RELATIONSHIP OF THE TRYPANOCIDAL TO THE SPIROCHETICIDAL ACTIVITY OF NEOARSPHENAMINE

Examination of the accompanying table shows that with fourteen, or approximately 78 per cent, of the eighteen lots of neoarsphenamine prepared by seven different laboratories, the results of trypanocidal and spirocheticidal tests were in agreement. Twelve of these showed both high trypanocidal (from 0.004 to 0.008 Gm) and high spirocheticidal activity (0.020 Gm), while two (S 1 and G 3) showed both low trypanocidal (more than 0.012 Gm) and low spirocheticidal (more than 0.020 Gm) activity.

Of the remaining four lots, two (S 2 and G 2) were below the average in trypanocidal but up to the average in spirocheticidal activity, while two (C 3 and P 1) were of the average trypanocidal but below the average in spirocheticidal activity.

<sup>4</sup> Schamberg, J. T., Kolmer, J. A., and Raiziss, G. W. *Am. J. M. Sc.* 160: 25 (July) 1920.

Under the circumstances, we believe that the results indicate in a broad and general manner that the trypanocidal activity of neoarsphenamine is a measure of its curative activity in syphilis in the majority of instances. It is true that in approximately 22 per cent of the samples tested this statement was not substantiated by the results, but it is likely that comparative tests with a larger number of compounds may show even a closer relationship and particularly that neoarsphenamine much below the average in trypanocidal activity will be below the average in spirocheticidal or curative activity for syphilis. In this connection, clinical experience with neoarsphenamine is not without significance. For example, during the past year one of us had referred to the clinic a man presenting numerous mucous patches on the tongue and lower lip despite twenty-four injections of neoarsphenamine and thirty-four injections of a bismuth compound. Following the injection of one dose of neoarsphenamine (0.3 Gm.) of other manufacture along with 0.1 Gm. of a bismuth preparation, about 90 per cent of the lesions healed within a week. The fact that this patient had been treated with a brand of neoarsphenamine which gave very poor results in both the trypanocidal and the spirocheticidal test rather points to the value and validity of these tests.

#### THE NECESSITY FOR AN ACCEPTABLE LABORATORY STANDARD OF CURATIVE ACTIVITY OF NEOARSPHENAMINE

The fact that 22 per cent of the eighteen lots of neoarsphenamine examined in this investigation were found to be below the average in spirocheticidal or curative activity in rabbit syphilis is not without important practical significance and warrants the assumption that some laboratory check on curative activity is advisable. In this series there was one lot from each of four different laboratories falling below the average, with the remaining three laboratories the lots tested came within the range of average spirocheticidal activity.

Since trypanocidal tests are quickly and cheaply conducted, we believe that they are worthy of further trial in this connection and that in a broad and general manner it will be found that in the majority of instances neoarsphenamine much below the average in trypanocidal activity will be also found below the average in curative activity for syphilis.

Certainly it is well known that the curative activity of neoarsphenamine is subject to greater variation than is that of arsphenamine and since it is the most widely employed arsenical compound in the treatment of syphilis it would appear advisable to have some kind of occasional check on its curative activity as a safeguard against the regrettable error of treating syphilis with compounds below the average in spirocheticidal or curative activity. Sometimes this may be suspected or demonstrated by a failure of the lesions of syphilis in human beings to heal under neoarsphenamine treatment, as previously referred to, but it would appear that some kind of laboratory test would be required for quicker and more reliable information.

Spirocheticidal tests require more work and time but are probably worth while and we believe that the National Institute of Health would do well to consider the advisability of requiring the manufacturers of neoarsphenamine to test at least a fair percentage of their output for trypanocidal activity with an occasional check on their spirocheticidal activity. For example it may be required that neoarsphenamine shall prove completely trypanocidal in a certain standard dose and

curative in acute syphilis of the rabbit, including sterilization of the lymph glands in a dose of 0.020 Gm. per kilogram. Several rabbits could be treated with this single dose and the costs thereby reduced. It is true that about four months is required for the final results of the spirocheticidal tests and that it may not be fair to hold up lots for this period of time before their release for the treatment of human syphilis, but it would at least serve as an occasional check on the output of each laboratory licensed to dispense neoarsphenamine and do something worth while in reducing the chances of the regrettable error of approving neoarsphenamine below the standard in curative activity for the treatment of syphilis on the basis of toxicity tests and physical properties alone, as is now the custom.

Furthermore, while it is true that rabbits may be cured of syphilitic infection with amounts of neoarsphenamine much less than required for human beings according to body weight, it would appear that compounds below the average in curative activity for syphilitic rabbits is also below the average in curative activity for syphilitic human beings, at least we do not know of any evidence to the contrary of this statement. While it would appear that trypanocidal activity is not as reliable an index, since *Trypanosoma equiperdum* infection of rats is so different from *Spirochaeta pallida* infections of rabbits, the results indicate that the great majority of compounds of high average trypanocidal activity are of average spirocheticidal or curative activity in syphilis and that the determination of trypanocidal activity may be a sufficiently reliable routine test with the determination of spirocheticidal activity on a smaller percentage of output as an occasional check, because of a closer relationship to the treatment of human syphilis. But if spirocheticidal tests are accepted, it is apparent that the criterion of cure must rest on the results of lymph gland transfers from treated rabbits to fresh animals, since the rate of healing and disappearance of spirochetes from the testicular lesions and the rate of disappearance of positive blood Wassermann reactions are not acceptable criteria.

#### SUMMARY

1 Since neoarsphenamine is known to vary in anti-syphilitic properties, it is highly desirable to have some reliable and practical laboratory test of curative activity in addition to the present standards controlling toxicity and physical properties.

2 The maximum tolerated dose for white rats of eighteen different lots of neoarsphenamine prepared by seven different laboratories varied from 0.200 to 0.300 Gm. per kilogram of weight. Five, or approximately 28 per cent, had a maximum tolerated dose of about 0.200 Gm. per kilogram and were therefore below the minimum of 0.240 Gm. per kilogram required by the National Institute of Health.

3 The average minimal trypanocidal dose of the eighteen lots was from 0.004 to 0.008 Gm. per kilogram of weight by the Kolmer method. Thirteen, or approximately 72 per cent, of the lots tested were completely and five, or approximately 28 per cent, incompletely trypanocidal in these amounts.

4 The average minimal spirocheticidal dose for rabbits with acute syphilitic orchitis, including sterilization of the inguinal lymphatic glands, was about 0.020 Gm. per kilogram. Fourteen or approximately 77 per cent of the eighteen compounds tested were completely spirocheticidal in this dose, while six, or about 23 per cent were not.

5 The rate of healing of the testicular lesions and the disappearance of spirochetes were not acceptable criteria of the curative properties of neoarsphenamine. Lymph gland transfers from treated animals to fresh rabbits are required as criteria of cure.

6 Wassermann tests of the blood with the serums of treated animals are probably not acceptable criteria of cure unless conducted over periods longer than three months.

7 According to this investigation, it would appear that the results of trypanocidal tests checked with the results of spirocheticidal tests with approximately 78 per cent of the eighteen lots of neoarsphenamine tested.

8 By establishing a standard of minimal trypanocidal activity, we believe that it will be possible to detect quickly and cheaply lots of neoarsphenamine too far below the average in curative activity to warrant their use in the treatment of syphilis.

9 By establishing 0.020 Gm of neoarsphenamine per kilogram of weight as the minimal curative dose in acute

## Clinical Notes, Suggestions and New Instruments

### A SIMPLE METHOD FOR WRITING A SCIENTIFIC DIET

WILLIAM S. COLLENS, M.D., BROOKLYN  
Chief, Diabetic Clinic, Israel Zion Hospital

Among the major medical diseases in which the physician finds it necessary to prescribe a diet for a patient are included diabetes, obesity, cardiorenal disease, nephrosis and epilepsy. The progressive physiologic advances in the knowledge of nutrition have taught the clinician to respect the significant importance of the carbohydrate, protein, fat, salt and vitamin contents of foods when prescribing diets for patients. The present method of applying this useful information to the patient consists of resorting to diets recommended for these diseases by standard textbooks on nutrition and dietetics. One usually finds on investigating these books that the choice of diets is relatively limited. In diabetes, for example, one has little choice of selection from more than four to six inflexible diets. Again, in seeking a diet for nephritis, a list of protein-containing foods is given and the physician is advised to restrict or totally

CARBOHYDRATE		PROTEIN		FAT	
150 GRAMS		70 GRAMS		250 GRAMS	
600 CALORIES		250 CALORIES		1250 CALORIES	
<b>DIRECTIONS</b> 1. Knowing the total calories and the carbohydrate, protein and fat to be given, read the menu directly in the dial. The Carbohydrate foods ranging from 20 to 350 grams are found in the dial on the left. Subtract the Protein and Fat value of the Carbohydrate menu from the formula. The balance is the corrected Protein. Fat formula which is read in the dial on the right and on the reverse side. The Protein ranges from 40 to 175 grams and Fat from 20 to 150 grams. 2. Divide the menu obtained into 3 meals. 3. In the substitution tables will be found approximate portions of vegetables, fruits, cereals, cheese, meats, fish and nuts.		<b>TABLE OF EQUIVALENTS</b> 10 grams = 1 oz 100 grams = 3 1/2 oz 1 teaspoonful = 4 grams 1 tablespoonful = 15 grams 1 cup = 40 grams  <b>CALORIC VALUE OF FOODS</b> (For Clinical Purposes) 1 gram Carbohydrate = 4 calories 1 gram Protein = 4 calories 1 gram Fat = 9 calories		<b>GRAMS LEAN MEAT</b> 120 <b>FAT MEAT</b> 100 <b>LEAN FISH</b> 60 <b>FAT FISH</b> 2 <b>EGGS</b> 90 <b>GRAMS BUTTER</b> CC 20% CREAM 240 CC 40% CREAM 80 <b>GRAMS CHEESE—HIGH FAT</b> <b>GRAMS CHEESE—LOW FAT</b> CC BUTTERMILK 30 CC OLIVE OIL 30 <b>GRAMS NUTS</b> 30 <b>TEASPOON MAYONNAISE</b> 12	
<b>Vegetables—100 Gram Portions</b> 1 per Cent Asparagus canned 5 tips Asparagus fresh 4 1/2 stalks Beet greens cooked 1/2 cup Celery 10 medium stalks Cucumber 10 medium slices Endive 10 stalks Lettuce 10 large leaves Mushrooms 4 medium sized Romaine 10 large leaves Rhubarb cooked 1/2 cup Sauerkraut 1/2 cup Spinach 1/2 cup Brussels sprouts 1/2 cup Cabbage 1 cup Cauliflower 1/2 cup Eggplant 1/2 cup Green pepper 1 medium Radishes 5 small String beans canned 1/2 cup Tomato one 2 cups Watercress 1/2 cup Tomato canned 1/2 cup  <b>Fresh Fruits—100 Gram Portions</b> 10 per Cent Orange 1 small Grapefruit 1/2 small (4" diam) Cantaloupe small dessert dish Peach 1 medium sized Pineapple 1 slice 3/4 in thick Strawberries 1/2 cup Watermelon 1 cup Cranberries 1/2 cup  <b>15 per Cent</b> Beets 1 cup Green peas canned 1/2 cup Carrots 1/2 cup Olive 1/2 cup Onions 1 small Oyster plant 1/2 cup Pumpkins canned 1/2 cup Squash 1/2 cup String beans fresh 1/2 cup Turnips 1/2 cup  <b>0 per Cent</b> Artichokes 1 medium sized Green peas fresh 1/2 cup Lima beans canned 1/2 cup Parsnips 1/2 cup  Lima beans fresh 1 cup Navy beans 1/2 cup Corn fresh 6 tablespoons Potatoes baked 1 in diam		<b>Cereals—Uncooked</b> 25% Cal carbohydrates 30 gram portions Shelled Wheat 1 Corn Flakes 1 1/2 cups Grape Nuts 3 tablespoons Puffed Rice 1 cup  <b>Cereals—Cooked</b> 15% Carbohydrates 100 gram portions Farina 1 cup Malted Milk 1 1/2 cups Noodles 1/2 cup Spaghetti 1/2 cup Puffed Rice 1 cup Oatmeal 1 cup Hominy grits 1 cup  <b>Cheese—Low Fat</b> Cottage Cheese 1 cup Ricotta Cheese 1 cup Farmstead Cheese 1 cup  <b>Cheese—High Fat</b> American Cheese 1 cup Requefort Swiss 1 cup Muenster Cheddar 1 cup  <b>Nuts—30 gram portions</b> Almonds shelled 1/2 cup Butter nuts 8 nuts Walnuts 8 nuts Hickory shell 1/2 cup Peanuts 1/2 cup		<b>Lean Meat</b> 0 per Cent Protein 10 per Cent Fat Veal (Cutlet Breast or Leg) Leg of Lamb White Meat of Chicken Chicken Broilers Round Steak (Fat removed) Shoulder Steak Calf Liver Beef Liver  <b>Fat Meat</b> 0 per Cent Protein 10 per Cent Fat Lamb (Chops or Roast) Beef (Roast Sirloin Tenderloin) Corned Beef Pork Roast Tongue (Corned or Pickled) Ham Mutton Pork (Chop Roast) Goose Turkey  <b>Lean Fish</b> Mackerel Flounder Blue Fish Haddock Cod Shrimp Herring Lobster Halibut Crab meat Oysters Clams  <b>Fat Fish</b> White Fish Salmon fresh Salmon canned Sardines Carp Tuna fish Smoked fish Mackerel salt Caviar Smoked halibut Trout fresh	

Front face of diet calculator

syphilis of rabbits, it would appear practical and advisable to require laboratories engaged in the manufacture of neoarsphenamine to produce compounds possessing not only a minimum standard of trypanocidal activity but also this minimum of spirocheticidal activity.

10 We suggest and urge the National Institute of Health to establish standards of these kinds similar to the official standards of toxicity and physical properties of neoarsphenamine already in force for many years, with praiseworthy results, to lessen the chances of incurring the regrettable error of treating syphilis with neoarsphenamine below the average in curative activity.

2101 Pine Street

eliminate them. The physician is not given an opportunity from these references to prescribe a diet for the individual requirements of the patient under consideration. Thus, if he wishes to give a diabetic patient a diet containing the proportions of food ingredients that he thinks are indicated for his patient and is different from the standard diets advised, he finds a great deal of difficulty in making the adjustment. For example, a doctor may wish to give a patient a diet containing carbohydrate 175 Gm, protein 60 Gm, fat 90 Gm, 1,780 calories, it will require considerable searching to find the menu that will meet the requirements of this formula. Or when he may wish to give a nephritic patient a diet containing 40 Gm of protein and 2,500 calories he will find it necessary to seek the aid of a trained dietitian. The reason for this is that most medical schools do not include a course that trains the student in a thorough knowledge of food values and the quantitative

character of their chemical ingredients. It seems to have been relegated to the domain of the dietitian as a relatively unimportant branch of therapeutic information. The result is that the physician who wishes to apply the fruitful products of metabolic research to his medical practice is left with a gap which he finds difficult to span. When he finally decides to give an obese patient a diet of 900 calories containing 125 Gm of protein, his next question is "What shall I tell the patient?"

I have devised a simple chart with two dials which has solved this problem. It makes it possible to translate practically any diet formula into a menu. It contains 1,800 possible varieties of menus, any one of which can be read in less than half a minute, the total of which will meet with the contingencies of any diet requirement in medicine. A turn of the dials, and the twenty-four hour menu is read for any formula.

The front face of the chart contains two windows through which the figures on the dials are read, the left window for carbohydrate foods and the right window for protein-fat combinations. In the upper left hand corner are directions for using the chart, and the entire lower portion of the chart is devoted to substitution tables listing 100 gram portions of vegetables, fruits, cereals, cheese, nuts, meat and fish classified according to their carbohydrate, protein and fat values. For example, to prescribe a diet for an obese patient of 1,000 calories

**Lunch**—100 Gm of 5 per cent vegetables, 20 Gm of bread, 180 Gm of lean meat, 100 Gm of 10 per cent fruit, one glass of buttermilk.

**Dinner**—Clear broth, 100 Gm of 5 per cent vegetables, 180 Gm of lean fish, 20 Gm of bread, 100 Gm of 10 per cent fruit, tea.

**Evening**—One Uneda biscuit, one glass of buttermilk, 60 Gm of low fat cheese.

The reverse side of the chart contains directions for obtaining the formula for the diets in diabetes, obesity, cardiorenal disease, nephrosis and epilepsy. There will also be found a large number of sample diets that I recommend.

9 Prospect Park West.

### THERAPEUTIC INJECTIONS OF PROCAINE HYDROCHLORIDE IN UROLOGIC COMPLICATIONS

GUSTAV KOLISCHER, M.D. AND A. E. JONES, M.D., CHICAGO

The prompt assuaging of pain caused by urologic complications of gonorrheal or nongonorrheal origin is an active problem. It most frequently presents itself in acute epididymitis, prostatitis and gonorrheal arthritis. While it is true that in

**METHODS of obtaining DIET FORMULAS**

**DIABETES**

Caloric Requirements—Give approximately 30 calories per kilogram body weight.

(For a more accurate figure obtain Basal Energy requirement from Boothby Nomogram or Du Bois Formula, or do a basal metabolism test on patient. To this figure add 10% for Specific Dynamic Action of food and 20% for activity.)

Protein Requirements—Give  $\frac{3}{5}$  gram or 1 gram per kilogram body weight (Children under 10 give 2.3 grams per kilogram body weight.)

1. Low Carbohydrate High Fat Diet—(MARSH NEWBURN)

Give 1:1:3 ratio, i.e., 1 of carbohydrate to 1 of protein to 3 of fat. Thus start with any of these test diets—

C	P	F	Calories
30	30	90	1083
40	40	120	1444
50	50	150	1805
60	60	180	2166

2. Joslin Diet—1 gram of carbohydrate to 1 gram of fat

3. Sanum High Carbohydrate Diet—2 grams or 3 grams of carbohydrate to 1 gram of fat

The protein in the Joslin and Sanum diets range between  $\frac{3}{5}$  and 1 gram for every kilogram of body weight.

With method 3 it is usually necessary to give insulin therapy. After patient has been on this diet for 2-3 days, determine the amount of sugar excreted in 24 hours. One unit of insulin is given for every 2 grams of sugar appearing in the urine. If over 15 units are necessary give in divided doses.

**OBESITY**

The Oertel treatment and the Banting treatment recommend 2 times the normal intake of Protein with restrictions in the other food ingredients to bring the calories slightly below basal requirements. Examples—

Calories	C	P	F	Calories	C	P	F
800	60	100	1200	1000	110	125	1500
900	75	110	1400	1100	120	150	1600
1000	90	120	1600	1200	150	180	1800
1100	100	125	1800				

**CARDIO RENAL DISEASE**

Use low protein salt restricted diet. Examples—

Calories	C	P	F	Calories	C	P	F
1000	160	40	2500	1500	250	50	4000
1500	200	40	3000	1750	250	50	4500
1750	250	40	3500	2000	300	50	5000
2000	300	40	4000	2250	350	50	5500
2500	350	40	4500				

**NEPHROSIS**

Where there is marked retention of albumen in urine as in nephrosis or nephritis with edema give a high protein diet. One may give 2-3 grams per kilogram body weight. Examples—

Calories	C	P	F	Calories	C	P	F
1500	200	100	2000	2000	250	100	2500
	175	125	2250	2250	275	125	2750
	150	150	2500	2500	300	150	3000

**EPILEPSY**

Use high fat diets. Examples—

Calories	Ketogenic Antiketogenic Ratio = $\frac{2}{1}$			Ketogenic Antiketogenic Ratio = $\frac{3}{1}$		
	C	P	F	C	P	F
1000	100	40	90	5	30	100
1500	150	50	135	5	45	144
2000	200	70	180	15	50	200
2500	250	80	230	20	60	240
3000	300	100	275	20	80	300

Back face of diet calculator

containing carbohydrate 90 Gm, protein 120 Gm and fat 20 Gm the left dial is turned until 90 appears in the carbohydrate window and the right dial until 120-20 appears in the protein-fat window. All the foods appearing in both windows make a menu which complies with the requirements of the foregoing formula. Thus one reads 200 Gm of 5 per cent vegetables, 300 Gm of 10 per cent fruit, 40 Gm of bread, two Uneda biscuits, 180 Gm of lean meat, 180 Gm of lean fish, 120 Gm of low fat cheese, 720 cc of buttermilk. The lower portion of the chart contains lists of foods included under 5 per cent vegetable, 10 per cent fruit, lean meat and fat-free cheese with approximate sizes of portions. This list is then divided into three meals and given to the patient. The menu could then appear in such fashion:

**Breakfast**—100 Gm of 10 per cent fruit, 60 Gm of low fat cheese, one Uneda biscuit, one glass of buttermilk, tea or coffee with cream or sugar.

the majority of instances the current therapeutic efforts, such as epididymotomy, protein therapy, diathermy, aspiration and immobilization of the affected joint, will succeed in furnishing eventual relief, there still persists a more or less extended period of severe pain until the final therapeutic effect materializes. Injections of procaine hydrochloride round the affected areas furnish prompt cessation of pain, which relief is of a satisfactory duration.

Areas of reflected pain (Head's zones) remote from the inflammatory focus may also be the seat of severe annoyance and will also become silent by the administration of this local anesthetic. It is known that renal and ureteral colic and perinephric pains are promptly relieved by paravertebral injections of procaine.

Recently Halban reported that encircling injections of procaine were successfully employed in painful dermal zones produced by the viscerocutaneous reflex originating in acute and

chronic inflammations of the uterine adnexa. He states that they not only act as a temporary anodyne but also produce lasting therapeutic effects.

While the administration of paravertebral anesthesia calls for the services of an experienced technician, encircling injections of procaine are simple.

The principal point is not to make the injections into the inflamed organs but into the surrounding area. A 1 per cent aqueous solution is used for the injection. A quantity sufficient for flooding the adjacent tissues is injected.

It is known from the experiences gained in operative infiltration anesthesia that up to 40 cc of such a solution may be used with impunity.

In instances of epididymitis it is advantageous to locate by palpation the area within which the scrotal integument is adherent to the epididymis and then to flood the surrounding zone by moving the needle in various directions. In prostatitis the periprostatic tissue is injected by inserting a long needle through the perineum, the position of the needle being controlled by a finger inserted into the rectum. Painful funiculitis is treated in the same way by encircling injections alongside the chord. Arthritic joints are immediately made painless by the same method. The needle point is pushed in up to the fascia but not into the capsule or the joint. In twenty-seven patients treated in this way during the last year, the results were satisfactory and no untoward incidents were observed. The promptness of the analgesia and the advantage of tiding the patient over the intermediate period warrant the recommendation of this method.

108 North State Street

#### STREPTOCOCCUS SCARLATINAE

VOLUME OF A FORTY EIGHT HOUR BROTH CULTURE REQUIRED TO YIELD SUFFICIENT NUCLEOPROTEIN TO PRODUCE SKIN AND CONSTITUTIONAL REACTIONS IN SUSCEPTIBLE INDIVIDUALS

DAVID SEEGAL, M.D., AND MICHAEL HEIDELBERGER, PH.D.  
NEW YORK

Observations<sup>1</sup> are available which show that as little as from 0.0001 to 0.001 mg of nitrogen of *Streptococcus scarlatinae* is capable of producing characteristic skin reactions in susceptible patients. Other studies<sup>2</sup> have indicated that equivalent quantities of nucleoprotein derived from the hemolytic streptococcus may induce fever and malaise in patients with rheumatic fever. Some workers<sup>3</sup> hold that untoward constitutional reactions sometimes follow the intravenous injection of similar quantities of nucleoprotein in patients with subacute glomerular nephritis. Derick<sup>4</sup> has recently reported clinical improvement in patients with subacute hemorrhagic nephritis following repeated intravenous injections of a hemolytic streptococcus nucleoprotein.

This communication is presented in order that the clinician may better appreciate the relatively small number of bacteria required to produce these reactions.

A virulent strain of *Streptococcus scarlatinae* was grown for forty-eight hours in forty 15 liter portions of beef infusion broth containing 1 per cent of peptone and 0.1 per cent of dextrose. The broth was buffered with sodium phosphate. Bacterial counts on a mixed sample from fifteen of the forty flasks showed 420,000,000 organisms per cubic centimeter. The total number of bacteria in the 60 liters was, therefore, 25,200,000,000,000.

The total yield of nucleoprotein from the dried bacteria in this lot was calculated to be 50 Gm. The nitrogen content of the nucleoprotein was therefore approximately 0.8 Gm. This amount was equivalent to 800,000 average skin test doses, since 0.001 mg of nitrogen equals one skin test dose. Division of the total number of bacteria in the 60 liters (25,200,000,000,000) by the number of skin test doses of nitrogen (800,000) shows

that in this experiment 31,500,000 organisms are required to produce one skin test dose of nucleoprotein. This number of organisms is equivalent to 0.075 cc of the forty-eight hour culture.

Since these calculations are only approximate, it may be said that the nucleoprotein in a drop of the culture is sufficient to elicit the characteristic skin reaction.

It appears from these data that a relatively small volume of bacteria is necessary to produce the amount of nucleoprotein that has been found harmful to some individuals. In such diseases as rheumatic fever and subacute glomerular nephritis, in which the progressive pathologic condition prevails after the disappearance of obvious infection, it is thus apparent that minute foci of hemolytic streptococcus infection in the throat, sinuses, lymph glands or other similar areas may contain sufficient organisms to produce the harmful dose of nucleoprotein.

## Committee on Foods

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary

#### BRER RABBIT PURE SUGAR CANE AND CORN SYRUP (BROWN LABEL)

(Contains Sulphur Dioxide)

Manufacturer—Penick and Ford, Ltd., New Orleans

Description—A pasteurized mixture of sugar cane syrup (evaporated sugar cane juice) and corn syrup, treated with sulphur dioxide.

Manufacture—The sugar cane syrup ingredient is prepared as described for Brer Rabbit Pure Sugar Cane Syrup (Blue Label), described in THE JOURNAL, Jan. 7, 1933, page 43. The corn syrup ingredient is prepared as described on page 817 of the March 5, 1932, issue of THE JOURNAL. The sugar cane syrup and corn syrup in almost equal proportions are mixed, heated to 80 C and automatically filled into cans. The cans are not artificially cooled and therefore remain hot for a considerable time.

Analysis (submitted by manufacturer) —

	per cent
Moisture	26.2
Ash	1.3
Fat	0.0
Protein (N × 6.25)	0.2
Reducing sugars as invert	23.4
Reducing sugars after inversion (as invert)	54.1
Sucrose (copper reduction method)	29.2
Dextrins (by calculation)	18.2
Carbohydrates (by difference)	72.3
Iron (Fe)	0.0005
Calcium (Ca)	0.05
Sulphur dioxide (mg per kilogram)	11

Calories—29 per gram, 82 per ounce

Claims of Manufacturer—This syrup is for all table, cooking and baking uses.

#### HECHT'S SALT RISING BREAD

Manufacturer—Hecht's Bakery, Bristol, Tenn.

Description—"Salt rising bread" raised by a special non-yeast ferment containing organisms producing hydrogen and carbon dioxide, prepared by the sponge dough method.

Manufacture—This salt rising bread is fermented with a special ferment containing wheat flour, corn meal, corn flour, sodium bicarbonate, sodium chloride, calcium carbonate, calcium phosphate, potassium persulphate, potassium bromate, potassium iodate, potassium periodate, calcium sulphate and certain organisms and spores of organisms developed from corn meal, which produce hydrogen and carbon dioxide to leaven the bread dough.

From the Department of Medicine, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital.

<sup>1</sup> Ando, K., Karauchi, K. and Nishimura, H. J. Immunol. 18: 223 (March) 1930. Coburn, A. F. The Factor of Infection in the Rheumatic State, Baltimore: Williams & Wilkins Company, 1931, bibliography.

<sup>2</sup> Swift, H. F., Hitchcock, C. H., and Derick, C. L. Proc. Soc. Exper. Biol. & Med. 25: 312, 1928.

<sup>3</sup> Seegal, David, and Lytle, J. D. Unpublished studies.

<sup>4</sup> Derick, C. L. Tr. A. Am. Physicians, 1932.

The dough ferment for the bread dough is prepared by adding boiling water to a mixture of powdered skim milk and the special ferment. The mixture is stirred, covered and kept in a warm place (32-38 C) for nine hours, or until frothy. The sponge dough is made by mixing the prepared ferment with flour and water (38-49 C). The sponge is allowed to stand for one and one-half to three hours, at which time water (66 C), sugar, shortening, dried skim milk and salt are added and mixed. More flour is mixed in to make a smooth dough, which is divided into pieces of desired weight, molded, panned, proofed and baked.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture (entire loaf)	36.5
Ash	1.2
Fat	2.0
Protein (N × 6.25)	9.4
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	50.5

*Calories*—2.6 per gram 74 per ounce.

*Claims of Manufacturer*—This bread is prepared by a dough fermentation due to other organisms than yeast. The flavor is different from that of the usual white bread.

### PRUDENCE READY TO BROWN CORNED BEEF HASH

*Manufacturer*—Boston Food Products Company, Boston

*Description*—Canned corned beef hash, cooked corned beef and potatoes, seasoned with salt and pepper.

*Manufacture*—Fresh steer meat, United States inspected and passed by the Department of Agriculture, is cut to the proper sizes, skin, gristle and sinews are removed. It is placed in a light brine in a refrigerator for curing for eight days. The cured meat is cooked, and chopped in a chopping machine, chopped potatoes (prepared from pared, eyed, ripe potatoes), water, salt and pepper are added, the mixture is automatically canned and thoroughly cooked.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	70.5
Total solids	29.5
Ash	2.1
Fat (ether extract)	1.7
Protein (N × 6.25)	10.0
Reducing sugars before inversion as dextrose	0.5
Starch (acid hydrolysis method)	6.8
Sucrose (copper reduction method)	0.1
Crude fiber	0.5
Carbohydrates other than crude fiber (by difference)	15.2

*Calories*—1.2 per gram 34 per ounce.

*Claims of Manufacturer*—The product is for all table uses of corned beef hash.

### WHITE RIBBON FLOUR (PHOSPHATE ADDED)

Bleached and "Matured"

*Manufacturer*—The Scott County Milling Company, Sikeston Mo.

*Description*—A blended 'standard patent' flour milled from soft and hard red winter wheats bleached and matured.

*Manufacture*—Selected soft red winter and hard red winter wheats are cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with a mixture of benzoyl peroxide and calcium phosphate (1/10 ounce per 196 pounds) and matured with a mixture of chlorine and nitroxyl chloride (1 1/4 ounces per 196 pounds).

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	13.8
Ash	0.7
Fat (ether extraction method)	1.1
Protein (N × 5.7)	9.0
Crude fiber	0.2
Reducing sugars as dextrose	0.1
Sucrose (copper reduction method)	0.7
Total carbohydrates other than crude fiber (by difference)	5.2

*Calories*—3.5 per gram 94 per ounce.

*Claims of Manufacturer*—The flour is designed for biscuit

### BRER RABBIT PURE NEW ORLEANS MOLASSES (GREEN LABEL)

(Contains Sulphur Dioxide)

*Manufacturer*—Penick and Ford, Ltd., New Orleans

*Description*—Pasteurized New Orleans molasses taken from the second crystallization liquor in the preparation of cane sugar, treated with sulphur dioxide.

*Manufacture*—The cane syrup described for Brer Rabbit Pure Sugar Cane Syrup (THE JOURNAL, Jan 7, 1933, p 43) is concentrated by boiling. The sugar is partially crystallized out. The mass of crystals is removed by centrifugation. The liquid portion separated from the crystals is further evaporated and cane sugar again crystallized out, the second crop of sugar crystals is removed by centrifugation. The liquid obtained from this second crystallization is termed "second A molasses". It is held in a cold warehouse until the time of packing, when it is heated to 80 C and automatically filled in tins, which are not cooled and therefore remain hot for a considerable time.

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	23.0
Ash	6.0
Fat	0.0
Protein (N × 6.25)	0.9
Reducing sugars as invert	17.3
Reducing sugars after inversion (as invert)	63.0
Sucrose (copper reduction method)	43.4
Carbohydrates (by difference)	70.1
Iron (Fe)	0.006
Calcium (Ca)	0.27
Sulphur dioxide (mg per kilogram)	53

*Calories*—2.8 per gram 80 per ounce.

*Claims of Manufacturer*—This molasses is for all table, cooking and baking uses.

- 1 SUNRISE BRAND TOMATO JUICE
- 2 ADVO TOMATO JUICE
- 3 GOOD MORNING TOMATO JUICE
- 4 HERALD BRAND TOMATO JUICE
- 5 KAMO BRAND TOMATO JUICE
- 6 DAISEE BRAND TOMATO JUICE
- 7 KRASDALE BRAND TOMATO JUICE
- 8 FLEETWOOD TOMATO JUICE
- 9 APPROVAL TOMATO JUICE
- 10 NEW STATE BRAND TOMATO JUICE
- 11 PICKWICK BRAND TOMATO JUICE
- 12 18-K BRAND TOMATO JUICE
- 13 THE RIDER BRAND TOMATO JUICE
- 14 LESLIE BRAND TOMATO JUICE
- 15 GOODYEAR BRAND TOMATO JUICE

*Packer*—Vincennes Packing Corporation, Vincennes, Ind.

*Distributors*—1 Miner, Read & Tullock, New Haven, Conn.

- 2 McCord Brady & Co, Omaha
- 3 Good Morning Co-Operators, Terre Haute, Ind.
- 4 Mazo Lerch Company, Washington D C
- 5 Paxton and Gallagher Company, Omaha.
- 6 The Herrman Company, Paterson, N J
- 7 A Krasne, New York.
- 8 King Dobbs & Co, Chattanooga, Tenn.
- 9 M E Horton Inc, Washington, D C
- 10 The Williamson-Halsell-Frasier Company, Oklahoma City
- 11 Kansas City Wholesale Grocery Company, Kansas City
- 12 Winston and Newell Company, Minneapolis
- 13 The Nicholas Reiter Company, Baltimore
- 14 Crescen Dockham & Co Inc, Salem Mass.
- 15 Mazo-Lerch Company, Washington D C

*Description*—Pasteurized tomato juice with added salt retains in high degree the vitamin content of the raw juice the same as Alice or Old Vincennes Tomato Juice (THE JOURNAL, Feb 20, 1932, p 640).



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SATURDAY, JANUARY 21, 1933

## THE RHEUMATIC STATE

Despite unceasing investigations at the bedside and in the laboratory, rheumatic fever has remained one of the great enigmas of medical science. More and more it has become apparent that the manifestations of the disease affecting the joints may be entirely absent or play a relatively insignificant part in the clinical ensemble. The gradual recognition of the fact that the gravest effects are usually on the heart has greatly influenced the clinical management. The appreciation of the extent of cardiac damage and the direction of the treatment toward this feature is probably largely responsible for the decline in the death rate from heart disease during the past two decades among children under 15 years of age. While the death rate from all forms of heart disease has steadily increased during the last twenty years, the death rate from heart disease in children under 15 has declined 25 per cent.

One of the most interesting observations in the natural history of the rheumatic state is the occurrence of explosive outbreaks. The striking seasonal variation is emphasized by all observers. In America and continental Europe the greatest incidence of the disease occurs in late winter and spring, usually reaching its peak in April. Many students have described outbreaks, often reaching epidemic proportions, in urban populations, in certain families, in congested military camps, in convalescent hospitals and in other institutions. The fact that the disease is much more prevalent among poverty-stricken persons in temperate and subtropical climates, particularly in the colder damper areas, has produced many theories as to the possible etiologic significance of such sociological, climatological and meteorological influences.

Coburn and Pauli<sup>1</sup> have recently published the results of extensive studies of the relationship of Streptococcus hemolyticus to the rheumatic process. These

observers found that while the clinical and epidemiologic data of outbreaks of rheumatic fever have been carefully collected, bacteriologic studies of these waves of the disease have been strikingly lacking. Studies conducted by workers in England<sup>2</sup> have confirmed the observations of Coburn and Pauli that Streptococcus hemolyticus is quite constantly associated with the development of the rheumatic state. The rarity and mildness of the disease in certain tropical countries and its relative severity in the north temperate zone appear to be related to the influence of climate on infections of the respiratory tract associated with rheumatic disease. The influence of climate on scarlet fever, a streptococcal disease, is well demonstrated by the almost complete absence of this disease in the tropical island of Puerto Rico. That susceptibility to scarlet fever exists in Puerto Ricans is indicated by the fact that scarlet fever frequently develops in these persons after they arrive in the north temperate zone.

In order to measure the influence of climate on the flora of the upper respiratory tract, contemporaneous studies were conducted in New York and in Puerto Rico by Coburn and Otero during 1929 and 1930. The results demonstrated that the bacterial life in the constantly hot tropics and the pharyngeal flora of urban inhabitants of Puerto Rico are almost constant from month to month. Streptococcus hemolyticus appeared in the normal throat rarely and only in small numbers. Similar observations have been made by Milam and Smilie<sup>3</sup> in inhabitants of the Virgin Islands. In contrast to these observations, Coburn has found that the spring outbursts of rheumatic fever in New York have been preceded each year by a striking increase in the incidence of Streptococcus hemolyticus in the bacterial flora of the throat. Coburn regards the seasonal incidence of Streptococcus hemolyticus and the occurrence of rheumatic fever as a definitely correlated relationship. He has found also that poverty and unhygienic living conditions favor both the activity of Streptococcus hemolyticus throat infections and the incidence of rheumatic fever. Collis,<sup>2</sup> in England, has also observed that the organism associated with recrudescences of rheumatic fever is Streptococcus hemolyticus, infections of the upper respiratory tract termed colds and associated with the pneumococcus produced no recrudescence of rheumatic fever.

As a result of repeated studies of the flora of the throat in rheumatic subjects during recrudescences and remissions, it has been found that the recurrence of symptoms of the disease is almost invariably associated with Streptococcus hemolyticus pharyngitis from one to three weeks prior to the recrudescence of rheumatic fever. By studying rheumatic patients before, during

<sup>1</sup> Coburn, A. F. and Pauli, Ruth H. Studies on the Relationship of Streptococcus Hemolyticus to the Rheumatic Process. I. Observations on the Ecology of Hemolytic Streptococcus in Relation to the Epidemiology of Rheumatic Fever. II. Observations on the Biological Character of Streptococcus Hemolyticus Associated with Rheumatic Disease. III. Observations on the Immunological Responses of Rheumatic Subjects to Hemolytic Streptococcus, *J. Exper. Med.* 56: 609-676, 1932. Coburn, A. F. The Factor of Infection in the Rheumatic State, Baltimore: Williams & Wilkins Company, 1931.

<sup>2</sup> Glover, J. A. and Griffith, Frederick. *Brit. M. J.* 2: 521 (Sept. 19) 1931. Collis, W. R. F. *Lancet* 1: 1341 (June 20) 1931.  
<sup>3</sup> Milam, D. F. and Smilie, W. G. *J. Exper. Med.* 53: 733 (May) 1931.

and after transplantation from New York to the tropical environment of Puerto Rico, it was demonstrated that *Streptococcus hemolyticus* could not be recovered from the pharyngeal flora during residence in the tropics and the disease process remained quiescent. On the return of these individuals to New York, those who escaped infection of the upper respiratory tract remained free of rheumatic symptoms, while those who had *Streptococcus hemolyticus* pharyngitis had a rheumatic attack within three weeks after the throat infection. Extensive bacteriologic studies of ambulatory rheumatic subjects over a period of four years have demonstrated that those who escape respiratory disease remain free of rheumatic manifestations.

An investigation of the biologic character of the hemolytic streptococci recovered from the pharyngeal cultures suggests that rheumatic fever, like scarlet fever and erysipelas, is associated with a number of different serologic types. The collected observations on the relation of the activity of the rheumatic process to *Streptococcus hemolyticus*, and the failure to detect a single serologic type of organism associated only with rheumatic fever, have led Coburn to conclude that the specificity of the rheumatic response, like the reaction in certain other streptococcus diseases, does not depend entirely on the character of the organism but is probably also related to some individual mechanism of the rheumatic subject. The hemolytic streptococci recovered from the pharyngeal flora of those stigmatized with the rheumatic state were found to fall into six antigenic groups. The majority of the freshly isolated strains were strong toxin producers. The organisms producing the strongest toxin were present in cultures from the throats of patients who had intense rheumatic symptoms. About 70 per cent of these toxins were neutralized by a monovalent streptococcal antiserum.

As the result of a study of agglutination reactions, complement fixation reactions, precipitin reactions and the development of antistreptolysin, Coburn demonstrated the development of bodies immune to *Streptococcus hemolyticus* during the course of rheumatic fever. The constant finding of a high titer of antistreptolysin in the serum of patients with acute rheumatic fever provides evidence that the rheumatic attack is initiated by *Streptococcus hemolyticus*. It is found that there is a close relationship between the time of appearance of this antibody in the serum and the manifestations of activity of the rheumatic process.

This important undertaking provides strong evidence that the infectious agent initiating the rheumatic state is *Streptococcus hemolyticus*. If these observations can be confirmed by other investigators, the development of specific methods of prevention and treatment should be the next goal. The fact that effective antisera have been developed for the apparently closely related diseases scarlet fever and erysipelas should stimulate vigorous inquiry in this field.

## MOTTLED ENAMEL

In 1901, Dr J M Eager<sup>1</sup> of the U S Public Health Service, then stationed at Naples, reported a peculiar condition of the enamel of the teeth among Italian emigrants, particularly those coming from Pozzuoli, a community about five miles from Naples. This dental defect was called "denti di Chiaie," after Prof Stefano Chiaie, who first described the condition. From Eager's description it is recognized as being similar to the enamel defect found in various places in the United States and in other countries and now known as "mottled enamel." The latter designation was first applied by Black<sup>2</sup> as a descriptive name for the condition. According to his report, the essential injury is the appearance of the teeth, which are of normal form but not of normal color. When not stained brown or yellow they are a ghastly, opaque white, which comes prominently into notice whenever the lips are opened. In many cases the teeth appear absolutely black. Mottled enamel is distinguished especially by the absence of cementing substance between the enamel rods in the outer fourth, more or less, of the enamel, and a great variety of color is presented. The outer glazed enamel surface, or Nasmyth's membrane is present and appears to be normal except in what have been termed the "corroded" cases. The associated pigmented or stained phase of mottled enamel is called "brown stain." This brown stain does not occur in all cases of mottled enamel, and it seems to be limited to the labial surfaces of the upper incisors and cuspids.

Observations on children have indicated that enamel of the temporary teeth that are formed before birth and are dependent on prenatal nutrition almost never show the defect under consideration. As the permanent teeth do not begin to form until after birth, the mottled condition in them is apparently not related to maternal nutrition. When the occurrence of mottled enamel in teeth became better recognized, it was apparent that the defect often had an endemic character. Such an endemic area has been described<sup>3</sup> for the town of Bauxite, Ark., which was established in 1901 to provide homes and a social environment for the employees of a mining company. The original supply of water for domestic purposes came from shallow surface wells and a few springs. A larger supply was required as the population increased and in 1909 a well with a depth of 255 feet was drilled and later two other wells were drilled close by. Water from these wells was piped into the houses. Dental examinations of the children in the town school disclosed no cases of the enamel defect that antedated the introduction of the deep well.

<sup>1</sup> Eager J M. Denti di Chiaie. Pub Health Rep 16 2576 (Nov 1) 1901.

<sup>2</sup> Black C V. (in collaboration with McKay F S). A Brief Synopsis of a Paper entitled Mottled Teeth an Endemic Developmental Imperfection of the Enamel of the Teeth Heretofore Unknown in the Literature of Dentistry. Proc. Panama Pacific Dental Congress 1 2-1915. Mottled Teeth—An Endemic Developmental Imperfection of the Teeth Heretofore Unknown in the Literature of Dentistry. Dental Cosmos 58 129 (Feb) 1916.

<sup>3</sup> Kemf G A and McKay F S. Mottled Enamel in a Segregate Population. Pub Health Rep 45 2923 (Nov 28) 1930.

water The oldest child found with the enamel defect was born about the time the deep well water was introduced All children in the community who had used the deep well water during any considerable period of enamel formation exhibited this defect No person in the community whose enamel had developed elsewhere exhibited the defect Some who, although residents of the community and attending school there actually lived beyond the distribution of the deep well water and depended on the original shallow wells, exhibited only normal enamel In all, 458 children from 5 to 18 years of age were examined in the schools of Bauxite Mottled enamel of some teeth was found in 202 cases, or 44 per cent In evaluating this percentage the investigators recall again the immunity of temporary teeth and also consider the imported individuals, by which is meant those persons who had grown the enamel on such permanent teeth as were erupted at the time of the examination elsewhere, before becoming residents of Bauxite If some local condition at Bauxite was responsible for the defect, such enamel would of course be normal

This is a remarkable story It has been supplemented by later investigations in the same area A news item from Arizona published a few months ago<sup>4</sup> indicated that at least forty-five communities where mottled enamel of the teeth is endemic have been revealed as the result of investigations carried on in the past year throughout the state About 110 public and fifty-five private water supplies have been analyzed Communities with a population large enough to warrant investigation were visited, and the occurrence or absence of mottled enamel was recorded Examination was made of the permanent teeth of school children, and the water supply was sampled at the time of the examination The majority of the communities in which mottled enamel was found lie along two rivers, the Gila and the San Pedro Dietary studies failed to indicate any deficiency that could account for the dental conditions However, analysis of the water from St David and other communities in which the condition was endemic showed abnormal amounts of fluorine When residue left after evaporation of the water was included in the ration of rats, a condition similar to mottled enamel, if not identical with it, was produced

The occurrence of mottled teeth in Polk County, Iowa, has recently been reported<sup>5</sup> It seems likely that the defects began after the sinking of deep wells in this region and that the condition did not occur while shallow well water was used This is substantiated by the fact that the cases so far noted have occurred in children born at approximately the time when the deep wells were installed Here too, the chemical evidence so far secured tends to incriminate fluorine compounds

This does not apply to the stains, which were at one time attributed to manganese When the cause of mottling is definitely determined by the studies now in progress in several laboratories,<sup>6</sup> it will doubtless become possible to avert the danger It is interesting to note that Pozzuoli is reported to have changed its water supply and to be free from the defects noted For the present there are no incriminations of surface waters or shallow wells such as form the drinking water supply of most American communities

### PELLAGRA AND DIET

Adequate appreciation of the extent of the prevalence and the real significance of pellagra in the United States was not awakened until the present century The epidemic incidence of the disease in certain parts of the country was pointed out by Searcy<sup>1</sup> in 1907 Pellagra had probably occurred sporadically many years before this but had escaped proper recognition There are indications that during the Civil War outbreaks of the malady appeared in army camps and prisons At any rate, within the past generation pellagra has obtruded itself into prominence in this country in the consideration of the public health problems of the Southern states

There are few students of the subject who will venture the conclusion that the question of the etiology of pellagra is solved The older zeistic theory attributing the malady to an intoxication from spoiled maize has proved to be quite untenable Today the preponderance of opinion favors the conclusion that pellagra is to be classed among the so-called dietary deficiency diseases There is no complete accord regarding the food factor responsible for protection against the appearance of pellagra although many clinicians accept the views of the late Dr Joseph Goldberger and his associates of the U S Public Health Service implicating a vitamin Perhaps the difficulty in reaching complete accord is due to the possibility that pellagra is in many instances a syndrome presenting the composite result of several different deficiencies A few champions of an infectious origin of pellagra are still occasionally heard McLester<sup>2</sup> mentions the modified belief that the specific infection, if there is an inciting microbiotic agent, attacks only persons who, because of general malnutrition or of some more specific form of nutritional failure, are especially predisposed In any event there is assurance that an abundant, mixed diet is in most instances a prophylactic and a cure Sandels and Grady<sup>3</sup> have pointed out, after some experience in pellagrous districts, that the importance of diet in the prevention and treatment of pellagra is generally

<sup>6</sup> Smith and Smith Tech Bull 43 Arizona Agric Exper Sta, 1932

<sup>1</sup> Searcy G H An Epidemic of Acute Pellagra J A M A 49:37 (July 6) 1907

<sup>2</sup> McLester J S Nutrition and Diet in Health and Disease Philadelphia W B Saunders Company, 1931

<sup>3</sup> Sandels Margaret R and Grady Eunice Dietary Practices in Relation to the Incidence of Pellagra I A Study of Family Diets in Leon County, Florida, Arch Int Med 50:362 (Sept) 1932

<sup>4</sup> Fluorine Content of Drinking Water, J A M A 99:481 (Aug 6) 1932

<sup>5</sup> Ostrem, C T Nelson, V E Greenwood D A and Wilhelm H A The Occurrence of Mottled Teeth in Iowa, Science 76:573 (Dec 16) 1932

accepted. It is not yet clear, however, whether a specific dietary deficiency is involved or whether the deficiency is of a more general nature, important primarily in lowering the body's resistance to disease. Medical opinion in the South is still divided, though the weight of evidence at present available supports the conception of a specific deficiency.

Dietary surveys have been conducted in several regions or institutions where the incidence of pellagra has been high. On this basis Goldberger, Wheeler and Sydenstricker<sup>4</sup> suggested a few years ago that the seasonal appearance of pellagra may be correlated with variations in the food supply, if it is assumed that the winter season with its restricted diet serves as a long period of depletion. A recent dietary study in Leon County, Fla., by Sandels and Grady<sup>5</sup> of the Florida State College for Women in Tallahassee, is enlightening. Careful comparisons were made of the diet of pellagrous and nonpellagrous families at four seasons of the year, namely, midwinter, spring, late summer and fall. Records of recurrences of pellagra in the families studied show that the eruption appeared most frequently in March and April, before the increased food supply of the spring was available. Comparison of the records of the pellagrous and the control groups shows significant differences in the use of milk and succulent vegetables, particularly in the fall and winter diets, with some indications of a difference in the use of eggs, cheese and fruit. The use of lean meat and fish is similar in the two groups. These investigators interpret their results as a confirmation of the earlier observations of an inverse relationship between the use of milk and the incidence of pellagra, and an extension of these observations in showing the existence of a seasonal variation in the milk supply of the families studied, which is sufficiently greater in the pellagrous diets to constitute a significant difference between the dietary practices of the two groups. In these Florida records the use of milk for each adult male unit daily in the pellagrous and nonpellagrous families amounted to 6.8 and 15.8 ounces respectively, in the winter, and 3.3 and 14.6 ounces in the fall. Only in the late summer did they approximate equality (15 and 17 ounces). These facts support the dictum of Wheeler that in cases of borderline nutrition in which a slight unfavorable change in diet may put the family into the malnourished class the milk supply may be the controlling factor in the appearance or nonappearance of the disease. In this connection physicians may be interested in the growing number of sporadic cases<sup>6</sup> of pellagra or

pellagra-like symptoms, arising regardless of geographic locality as the result of voluntary or enforced severe dietary restriction. Many of these are associated with some dysfunction of the alimentary tract.

## Current Comment

### OROYA FEVER

At last, apparently, investigators are beginning to penetrate the mystery that has surrounded Oroya fever for more than forty years and that has taxed the ingenuity of numerous workers since Daniel A. Carrion in 1885 sacrificed his life to prove the identity of verruca peruana and Oroya fever. In 1909 Barton discovered in the red cells of Oroya fever patients small, rodlike, definitely motile organisms, which subsequently were called *Bartonella bacilliformis* and which he considered the pathogenic agent of the disease. Barton and several other investigators observed the frequency of associated secondary infections, particularly with the paratyphoid B bacillus, to which Barton, in 1912, frankly attributed the high mortality of the disease. Monge insisted, however, that death was due to the extreme virulence of the verruca virus itself and that the paratyphoid B infection was just a terminal manifestation and not the cause of the gravity of the disease. Ramon E. Ribeyro<sup>1</sup> now presents a series of thirty-six cases of Oroya fever, nineteen of which he himself attended. Of seventeen cases uncomplicated with paratyphoid B, sixteen were cured, including cases presenting malaria, dysentery, bronchopneumonia and typhus; one patient died from exanthematous typhus. Of nineteen cases complicated with paratyphoid B, one was cured and eighteen proved fatal. All these patients had an extreme degree of anemia, the erythrocyte count ranging between 620,000 and 2,700,000, but the majority averaging about 1,500,000. Among his nineteen personal cases there were thirteen uncomplicated with paratyphoid B, of which twelve were cured, one patient dying of typhus; these thirteen cases belonged to the laboring class living under conditions that undoubtedly exposed them to previous immunizing attacks of typhoid and paratyphoid. His remaining six cases were complicated with paratyphoid B and proved fatal; all the patients belonged to the better class and the probabilities are that their mode of living had protected them against previous infection with typhoid or paratyphoid. Ribeyro concludes from his experience that any case of Oroya fever complicated by paratyphoid B is most likely to be fatal. Until recently, authors have stated the prognosis of Oroya fever as extremely serious because none have made an attempt to separate the disease from its complications. Some have based their statements on the inadequate investigations of workers in the field whose conclusions they thought acceptable. Now it is evident that Oroya fever offers a favorable prognosis regardless of the extent of the destruction of the red blood corpuscles and it is not even necessarily fatal when complicated by malaria,

<sup>4</sup> Goldberger, Joseph, Wheeler, C. A., Sydenstricker, E. J. and King, W. L. A Study of Endemic Pellagra in Some Cotton Mill Villages of South Carolina. *Bull. Hyg. Lab. U. S. P. H. S.* January 1916.

<sup>5</sup> Wheeler, C. A. Pellagra in Relation to Milk Supply in House 1. *J. Nat. Health* 1916, 210 (Aug. 29) 1916.

<sup>6</sup> Carles, J. S. A Case of Pellagra Following Voluntary Restriction of Diet. *J. A. M. A.* 91: 879 (Sept. 22) 1925. Eusterman, C. B. and Oles, J. A. Pellagra Secondary to Benign and Carcinomatous Lesions and Dysfunction of the Gastro-Intestinal Tract. Report of Thirteen Cases. *Arch. Int. Med.* 47: 61 (April) 1931. Crutchfield, E. D. et al. with Special Reference to the Skin and Mucous Membrane. *Arch. Derm. & Syph.* 27: 650 (May) 1928.

<sup>1</sup> Ribeyro, R. E. Verruca Peruana and Paratyphoid B, *Reforma Med.* 18: 252 (Oct.) 1932.

dysentery, bronchopneumonia and exanthematous typhus. As demonstrated by Ribeyro's series of cases, the prognosis of plain Oroya fever is favorable, it is reserved in the complicated form but fatal when the complication is due to paratyphoid B bacillus. A self evident corollary of these conclusions is the necessity of vaccinating against paratyphoid B all who are compelled to reside in or to travel through the infected districts.

## Medical Economics

### NEW FORMS OF MEDICAL PRACTICE

#### 11 Hospital Insurance Schemes

#### PLANS IN THE UNITED STATES

(Concluded from page 123)

The National Hospitalization System, Inc., is another nationwide company engaged in the promotion of group hospitalization plans. It has recently entered into a contract with St. Paul's Hospital, Dallas, Texas, which has not continued for sufficient time to permit of any report as to results. This contract, however, supersedes a previously existing plan of a similar character on the operation of which the hospital has reported the facts summarized in the accompanying table.

*Resume of Members of Dallas Methodist Hospital, Hospitalization Given Members, and Monies Paid Hospital from February, 1931, to Oct. 1, 1932*

1	Members in good standing 10/1/32 (2,510 men—2,279 women)	4,789
2	Total members entered hospital during 1931 up to 10/1/32 (179 men—261 women)	458
3	Total number of days in hospital (1,778 men—2,527 women)	4,305
4	Average number of days in hospital (men)	9
5	Average number of days in hospital (women)	9.68
6	Average charge by hospital per day	\$ 5.92
7	Average receipts by hospital per day	6.78
8	Total charge by hospital	25,493.79
9	Total paid hospital (basis, \$0.50 month)	29,209.10
10	Net surplus to hospital	3,815.31

The plan installed by the National Hospitalization System, Inc. collects \$9 a year, for which St. Paul's Hospital agrees to give twenty-one days' hospitalization annually, in a \$5 private or \$4.50 semiprivate room, with 33 1/3 per cent reduction on further care. It does not include any medical or surgical fees, makes the customary exceptions of tuberculosis, chronic, contagious, mental and venereal diseases, and the contract also contains the usual provision that in case of epidemic or public disaster the hospital may discharge its obligation by refunding twice the amount paid by the insured during the previous twelve months. Special emphasis is placed in the advertising on the fact that a member losing his position is permitted to retain his insurance and continue to pay dues, and that free choice of doctor is permitted among the members of the Dallas Medical Society.

One leaflet distributed states on its cover that "St. Paul's Hospital now offers Complete (Group Plan) Hospitalization Service for only 2 1/2 cents per Day." The reading matter explains the limit of twenty-one days but says nothing of excluded diseases or of the reservation in case of epidemics. The radio is also used as a method of advertising, but no report of the nature of such talks has been received.

A number of hospitals in and around Newark, N. J., have formed the "Associated Hospitals of Essex County, Inc." to install and operate a plan of joint hospitalization. The fees are fixed at \$10 a year or 85 cents monthly and the provisions of the contract are almost identical with others already described except for a fifteen day waiting period after the first payment.

It is also provided that "Service will be rendered only upon authorization and request by the subscriber's personal physician, who must be a member of a County Medical Society in New Jersey and/or acceptable to the hospital selected by the subscriber. During the period of hospitalization the subscriber

must be under the treatment and care of such physician in accordance with his staff privileges at the hospital selected by the subscriber.

The "Associated Hospitals of Essex County, Inc." is an association not for pecuniary profit, with wide powers, not only as to the management of the plan, but also to "aid and assist in the development of a health program for the communities served by such hospital plan."

The Hospital Conference of the City of New York is considering a plan to embrace all the hospitals of that city. Some of the proposed provisions are as follows:

Each individual of the group would contribute eighty-five cents a month or ten dollars a year through a pay roll deduction or as might be otherwise arranged. The employer would collect the payments and turn them over to a common hospital fund from which the hospitals, furnishing the service, would be reimbursed. On its part each participating hospital would furnish these individuals, whenever necessary, with a maximum of twenty-one days of care in semi-private accommodations. The care would include board, nursing, use of operating room, laboratory tests, X-rays, anesthetics, drugs, and dressings, attention of hospital medical staff and other hospital facilities, exclusive of physicians or surgeons' fees. Inasmuch as the average hospital stay is less than two weeks, the three-week period of free care has proved adequate. The only hospital cases not benefiting under the plan are chronic diseases, mental troubles, tuberculosis and contagious diseases, such as smallpox, which cannot be accepted in general hospitals. This service does not apply to patients eligible to treatment under the Workmen's Compensation Act, but does apply to accidents and other illness. By giving the patient semi-private care, the physician or surgeon can keep his personal contact and arrange his own terms for payment with his patient.

There are many minor variations of all these plans. The Touro Infirmary of New Orleans extends the privilege of a 33 1/3 per cent discount, not only, as is customary in many such plans, to all hospital services beyond those provided in the contract, but also to dependents of those insured. The rate is \$10 a year, and the hospital deals only with employed groups.

Among the provisions of the plan are "Free choice of physicians. Personal relation preserved between patient and physician. Does not include doctors' fees."

The plan of the Hahnemann Hospital in Philadelphia has much the same provisions. Payment by employed persons of \$10 a year insures thirty days' hospitalization yearly in a semi-private ward. In the beginning, a scheme was included for payment of physicians on a fixed fee schedule in return for an annual contribution of \$15, but, owing to the opposition of the physicians to what they considered a form of contract practice, this was abandoned. The present plan has been sharply criticized by local physicians on the ground that a patient who had received thirty days' complete hospitalization in return for a payment of \$10 would conclude that any fee charged for medical or surgical services much above that amount would meet with objection as excessive and be difficult of collection.

The plans installed by promoters are all much on the same pattern as to the rates and the provisions of hospitalization, although some recent schemes are showing a tendency to reduce contributions, which must result in deterioration of services or exploitation of the hospitals. The amount of commission charged for installing and operating the plan in the schemes studied varies from 21 to 80 per cent. In some cases there is a system of "reserves" that would seem to offer opportunity for the diversion of considerable additional sums into the pockets of the promoters.

#### CRITICISM

The principal merits of such plans are the following:

1. Limitation of these schemes to hospital care with restrictions as to length and character of services furnished and diseases covered makes possible more accurate actuarial calculations than are applicable to general sickness service. Confining the scope to employed groups insures certain standards of health and income and reduces sales and collection expense.

2. Such schemes seem to afford, temporarily, at least, regular financial support to the hospital. It is claimed that they will tend to reduce fluctuations in the use of services and to distribute the burden of cost among a large number, thereby reducing the load on individuals.

3. If hospital standards are maintained, a fairly high grade of care is assured.

4. It provides payment of the costs of hospitalization for many patients who might otherwise be objects of charity and a burden on the resources of the hospitals.

Some of its present and prospective defects are that

1 To a large extent such schemes are being installed as a result of a "tactics of desperation," in which hard pressed hospitals are seeking "any port in a storm." This is a situation in which hasty action is apt to create institutions and vested rights and relations whose future effects may be far different from present expectations. Such plans need careful consideration based on investigation and comparison of experiments now under way. Examination of some of those already in existence and others in process of adoption gives ample evidence of the lack of such investigation and preparation.

2 The adoption of such a plan by a single hospital or a group of hospitals, in a locality, creates a division within the hospital field and the medical profession and a feeling that such a plan, by creating an artificial monopoly through salesmanship and compulsion by employers is able to exert "unfair competition" on those hospitals outside the scheme. This situation encourages the formation of rival groups and such undesirable forms of commercial competition as solicitation, underbidding and consequent deterioration of service. It also destroys freedom of choice of physicians and hospitals for as large a section of the population as are induced to become contributors.

3 All such plans tend to lessen the control of county medical societies over medical practice and thus to decrease the effectiveness of the most important form of professional control of standards and ethics, while at the same time it increases the influence of lay commercial interests.

4 Such plans tend to extend hospital care beyond its natural scope. Patients who would ordinarily be cared for by a family physician at home will insist on going to the hospital where they feel they have already paid for care. Baylor University Hospital found that teachers used their hospital privileges during vacation for rest and the treatment of ailments neglected during the teaching term. This is an indication of a tendency that has disrupted actuarial calculations in many European systems of health insurance. When any form of service is paid for in advance there is a desire to secure the benefits. Consequently, not only have morbidity rates steadily increased under all such systems but great pressure is brought on physicians to certify to sickness so that the cash benefits may be obtained. It is at least probable that a similar pressure will be exerted by contributors to hospital insurance on attending physicians to secure hospital certification. Should this tendency develop it would invalidate the calculations, none too accurate at present, on which schemes of hospital insurance are based, and also tend to create some of the conflicts between patient and physician that have had such evil results in systems of general health insurance. Where there is a choice of hospital, if the rates paid are such as to leave a surplus the hospital may be inclined to encourage such overhospitalization as a source of income.

5 These plans make the hospital a "preferred creditor" over the physicians and surgeons. Unless the contract and the salesmen make it emphatically clear that the services of the physician require additional payment, many patients will be led to believe that their contributions cover all expense during hospitalization. Experience has shown that hired salesmen soliciting contributions from firms and individuals may not only neglect to point out any such restrictions but may seek to give the impression that all medical care is covered by the contributions.

6 The employment of salesmen especially on commission which is a feature of many plans introduces all the elements of commercial competition including some that are considered unfair even in business. Such plans depend on securing contracts for future sales from a large section of the market for medical services and then using the monopoly so secured to fix the terms of such service. When this monopoly is further buttressed by group and employment compulsion denying to the individual for some time in the future the right to select the form and source of his medical service conditions are created closely analogous to those that have already been determined in business by the Federal Trade Commission and the courts. Such a comparatively mild method of insuring future patronage as is offered by trading stamps has been forbidden by law in many states.

7 There are a number of legal questions that do not seem to have been sufficiently investigated and have not yet been passed on by the courts. Can a hospital chartered not for

profit enter into a scheme which, as do some of those offered by promoters, promises considerable profits? Do these schemes constitute insurance? If so, will they come under the various laws and regulatory bodies set up for control of insurance? The legal provisions of the different states vary widely on this point and certainly should be examined by any hospital proposing to enter into such a scheme. The exact legal obligations incurred by the hospital through the contract with the contributor lack clear definition and interpretation. In view of the relation to insurance and to the prohibition of some closely analogous forms of "unfair competition," the exact responsibilities assumed under such a contract are far from clear. Such arrangements make the physician certifying to the need of hospitalization a part of the contract and create relations in some ways different from those existing when such a contract does not exist.

8 The moment the sphere of commercial competition is permitted to invade the organization, direction and marketing of medical services, and especially if these functions are placed in profit-seeking commercial hands, the whole history of medical practice has shown that deterioration in ethics and service inevitably follows. Rival schemes fight for survival by lowering payments for professional services, by more flamboyant advertising and exaggerated promises and by giving inferior service.

9 Every new social arrangement tends to become a nucleus of much wider developments and to establish institutions, customs and vested interests having an influence far beyond the immediate intentions of the founders. This will almost certainly be true of hospital insurance. The first tendency, already developed in several schemes, is to extend the scope of the scheme from hospitalization to general medical care. The advantages and disadvantages of such general plans have already been discussed here, but there are some especially undesirable features about the extension of a scheme planned for hospitalization, often managed by profit-seeking promoters and with no control by organized medicine. If general medical care for low-paid workers is to be placed on an insurance basis, it certainly should not be introduced incidentally through plans organized for other purposes and in ways hostile to the best considered opinions of the organized medical profession.

10 The broad effect of all such plans is to shift the burden of hospital support from philanthropy and good will to assessment of low-paid workers. One of the selling points made by promoters of such plans is that the surplus received from contributions may be used to meet the expense of indigent care. It is also urged that many previously free bed wards may be changed to income-producing space. Is it entirely ethical for an institution to utilize philanthropic gifts to build such beds and then use them for producing income? This question may be purely academic at the present moment, but will it remain so in the future?

11 Even with all the safeguards of the British system most of which are absent from American schemes the question of control of hospital management by lay organizers of contributory schemes is becoming troublesome. Does any one believe that once a promoting organization perhaps of nationwide scope, has through a system of contracts gained control of a large share of the market for hospital service it will hesitate to use that power to control hospital management?

12 Confining the scope of the service to employed wage-workers leaves a large section of the population most in need of hospital care without protection a feature that in other countries has led to a demand for all-inclusive compulsory governmental action. Is the pattern being created by the present hospital schemes one that could be followed by such an extension without the introduction of great harm to the medical profession and the public?

13 Restricting of the scope to the employed means that a worker who contributes to such a scheme for years becomes ineligible for its benefits the moment he loses a job. If that loss is due to failing health he loses his protection just when most needed.

14 Reference has already been made to the dangers of misrepresentation when salesmen are employed. Practically all these plans issue some sort of advertising usually in the form of circulars or pamphlets for general distribution. Such material invariably exaggerates the scope of the protection



offered. In many cases the divergence between such advertising and the terms of the contract is greater than the Federal Trade Commission permits in business advertising.

15 If payments are made direct to the hospital or if the funds are held in open bank account by the commercial organization promoting the scheme, there is, in some plans, no security that the scheme is sufficiently sound financially, or the funds so safeguarded that in case of failure the insured who had contributed for future care might not be left without recourse. This is especially true when a scheme is conducted either by a hospital or separate agency without proper safeguards being set up to insure the safety of the funds.

## Association News

### THE MILWAUKEE SESSION

#### The Scientific Exhibit

The Committee on Scientific Exhibit announces that those persons intending to read papers before various sections of the Scientific Assembly at the Milwaukee Session and who also wish to show the material illustrating those papers in the Scientific Exhibit should make application for space in the Scientific Exhibit before February 13, at which date applications close. Application blanks may be obtained from the Director, Scientific Exhibit, 535 North Dearborn Street, Chicago.

### MEDICAL BROADCAST FOR THE WEEK

#### American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 9 45 to 9 50 a m (central standard time) over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

January 23 Colds  
January 25 Don't Run This Risk

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

January 28 Burning the Candle at Both Ends

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Society News**—Dr Guy L. Hunner, Baltimore, addressed the Jefferson County Medical Society, Dec 16, 1932, on "Calculus of the Upper Urinary Tract with Special Consideration of Recurring Stones."—At the December meeting of the Jackson County Medical Society, Dr Willard H. Steele, Chattanooga, among others, spoke on "Nonsurgical Management of Sinusitis."—Dr John O. Rush, Mobile, addressed the Baldwin County Medical Society at Fairhope, Nov 3, 1932, on "Cystoscopic Treatment of Vomiting of Pregnancy."

### ARKANSAS

**Society News**—Dr Russell A. Hennessey, Memphis, addressed the Pulaski County Medical Society, Nov 28, 1932, on "Prostatic Resection."—Speakers before the Arkansas County Medical Society at its meeting in Stuttgart Nov 22, 1932, were Drs William T. Pride, Memphis, on analgesia in obstetrics, Grayson E. Tarkington, Hot Springs, "Early Treatment of Syphilis," and James S. Speed, Memphis, "Fractures of the Elbow."

**Personal**—Dr Walter M. Matthews, Jr., has been appointed chief medical officer for the Little Rock regional office of the Veterans' Administration, newspapers reported, Dec 4, 1932,

to succeed the late Dr Robert B. Corney. Dr Matthews, who has been a resident of Little Rock since 1921, became connected with the administration in 1922 and has been chief of the tuberculosis unit at the hospital since 1926.—Dr and Mrs Thomas B. Blakely, Coal Hill, celebrated their golden wedding anniversary, Nov 19, 1932.

### CALIFORNIA

**Changes in Health Officers**—Dr Richard Heinz has been appointed health officer of Pleasanton, succeeding the late Dr James Hallam Cope. Dr Charles S. Mitchell succeeds Dr Lewis L. Seligman as health officer of Dinuba. Dr Etta S. Lund, Willows, has been appointed health officer of Glenn County to succeed Dr Frank M. Lawson, Willows, and Dr Theodore Snapp, Auburn, health officer of Placer County, succeeding Dr David M. Kindopp, Colfax. The public health work of San Joaquin, Fresno County, is now under the supervision of the Fresno County Health Department, of which Dr James E. Pendergrass, Clovis, is health officer.

**Popular Medical Lectures**—Stanford University School of Medicine began its fifty-first course of illustrated popular medical lectures at Lane Hall, San Francisco, January 6, when Dr Arthur W. Meyer, Palo Alto, spoke on "Ancient Man and Ape." In the second lecture, January 20, Dr Ray Lyman Wilbur, Washington, D. C., discussed the work of the Committee on the Costs of Medical Care. Subsequent lectures will be given by the following physicians:

Walter H. Brown, Palo Alto, Results of a Study of Nursing Care of Middle Classes, February 3  
Herman M. Adler, Berkeley, Psychiatry of Crime, February 17  
Howard C. Naffziger, Brain Surgery, Its Beginning, Development and Present Day Application, March 3  
Alonso E. Taylor, Stanford University, Danger of Subnutrition During Business Depression, March 17

**Bill Introduced**—A 18, to amend the chiropractic initiative act, proposes (1) that the secretary of the chiropractic examining board be paid an annual salary of \$4,500, (2) that the board have authority to employ an attorney, an assistant secretary, and inspectors, at compensations to be fixed by the board, (3) that the board issue annually a directory of licensed chiropractors, (4) that the annual registration fee required of chiropractors be raised to \$10, and the fee for licenses by reciprocity to \$100, and (5) that the board be authorized to enter into agreements of reciprocity with other states. Since under the California constitution the legislature cannot amend the chiropractic practice act, which was adopted by the people under the initiative system, this bill, if enacted, is to take effect on the adoption of an amendment to the constitution authorizing or ratifying its enactment by the legislature.

### ILLINOIS

**Indicted for Murder by Abortion**—Dr Anthony Michael Catania, 5258 West Division Street, Chicago, was indicted by the grand jury, Dec 28, 1932, on the charge of murder by abortion. Dr Catania graduated in 1930 from Loyola University School of Medicine, Chicago, and was licensed in Illinois in 1930. He was not a member of the Chicago Medical Society.

**Society News**—The Illinois Radiological Society will be addressed in Jacksonville, January 22, by Drs Edward L. Jenkinson and Leslie L. Veseen, Chicago, on "Treatment of Lesions of the Prostate" and "Pathological Conditions of the Kidney," respectively.—Dr Robert H. Herbst, Chicago, addressed the Kankakee Medical Society, January 12, on "Transurethral Electroresection of the Prostate Gland."—Dr Olin West, Chicago, discussed the report of the Committee on the Costs of Medical Care before the Sangamon County Medical Society in Springfield, January 19.—At a meeting of the McLean County Medical Society, January 10, Dr Maximilian J. Hubeny, Chicago, spoke on "Hypertrophic Spondylitis Accompanied by Radiculitis."

### Chicago

**Society News**—Dr Arthur Steindler, Iowa City, addressed the Institute of Traumatic Surgery, January 11, on "Disability Following Simple Fracture at the Wrist," Dr Hiram Winnett Orr, Lincoln, Neb., "Problems of Chronic Osteomyelitis," and Dr Fremont A. Chandler, "Lesions of the Isthmus of the Lower Lumbar Vertebrae."—Dr Harry Friedenwald, Baltimore, spoke before the Chicago Ophthalmological Society, January 6, on "Retinal Vascular Disease, Its Relation to General Vascular Disease, with Special Reference to Hypertension."—Speakers before the Chicago Surgical Society, January 6, included Drs Edward Starr Ludd, Rochester, Minn., on surgery of the biliary tract, and Ralph B. Bettman and Robert S. Baldwin, "Retrograde Jejunal Intussusception."—Dr George Waldbott, Detroit, addressed the Chicago Society of Allergy, January 16, on "The Allergic Thymic Child."

## INDIANA

**Personal**—Dr Charles C Dubois, formerly health officer of Warsaw, has been elected mayor, December 12—Dr Harry H Botts has been appointed medical officer in charge at the Veterans' Administration Hospital, near Marion

**Bill Introduced**—H 20, to amend the workmen's compensation act, proposes (1) that the employer of an employee injured in an industrial accident furnish for thirty days after the injury the necessary medical care and that thereafter the industrial board may require the employer to furnish medical care for an additional period not limited in the bill, and (2) that in an emergency, or if the employer fails to provide the necessary care, or for any other good reason, the employee may choose his own physician, the employer being liable for the services rendered

**Society News**—The Indianapolis Medical Society will be addressed, January 24, by Drs Carl H McCaskey on "Carcinoma of the Tongue", Matthew Winters, "Comparative Study of Toxoid and Toxin-Antitoxin Immunization Against Diphtheria" and Charles A Weller, "Hernia and Postoperative Complications" Speakers at the January 31 meeting will be Drs John Kent Leasure on "Tuberculosis of the Larynx with Unusual Case Reports", Delbert O Kearby, "Papilloma of Larynx," and Barnard J Larkin, "Ocular Manifestations of General Diseases" Dr Walter F Kelly was recently elected president of the society—Mr H J Anslinger, Washington, D C, spoke before a joint meeting of the Terre Haute Academy of Medicine, Vigo County Medical Society and the Fifth District Medical Society, Dec. 2, 1932, on "The Narcotic Traffic"—Dr John H Warvel, Indianapolis, addressed the Rush County Medical Society recently on 'Home Management of Diabetes'

## KANSAS

**Bill Introduced**—H 6, to amend the law regulating the production and distribution of peyote, agave americana, and cannabis indica (marihuana), proposes (1) to correct certain errors of spelling in the original act and (2) to make any violation of the act a felony, instead of a misdemeanor, with increased penalties

**Society News**—A symposium on tuberculosis was conducted before the Sedgwick County Medical Society, January 17 by Drs Thomas S Finney, Arthur E Bence, Rene M Gouldner, Carl R Burckard and Lloyd P Warren, Wichita Drs Ralph W Hissem and C Alexander Hellwig, Wichita, addressed the society, January 3 on "Transurethral Prostatectomy" and "Pathology and Blood Chemistry of Prostatic Hypertrophy," respectively

## MAINE

**Bill Introduced**—S 1, covering 472 sections is a proposed code of health and welfare legislation to replace and supplement similar legislation now in force in the state

**Society News**—Dr Adam P Leighton, Jr, Portland, was elected president of the Cumberland County Medical Association at its annual meeting in Portland Dec 30, 1932 and Dr William Holt reelected secretary Malpractice was the general topic for discussion The speakers included Dr Edville G Abbott Portland Chief Justice William R Pattangall and Judge Sidney St F Thaxter—Dr Channing Frothingham Boston addressed the Penobscot County Medical Association Dec 20 1932, on controversial problems of diagnosis and treatment

## MARYLAND

**Dr Thayer Willed Body to Science**—In his will, Dr William Sidney Thayer, professor emeritus of medicine Johns Hopkins University School of Medicine requested that a necropsy be performed on his body at the earliest possible moment after death Dr Thayer died Dec 10 1932 He suggested that the circumstances of a complete anosmia which he had endured since a resection of his nasal septum about fourteen years ago might be of scientific interest Dr Thayer left his collection of medical books to the Welch Library at Johns Hopkins and valuable prints to Harvard University

## MASSACHUSETTS

**Personal**—Dr William Franklin Wood former assistant director of the Massachusetts General Hospital is the new director of McLean Hospital Belmont succeeding Dr Kenneth A Tilton—Dr Channing Frothingham has resigned as associate clinical professor of medicine in Harvard University Medical School effective September 1 Dr Frothingham who has been on the staff of the school since 1908 is to take charge

of the medical department of the Faulkner Hospital, Jamaica Plain—Dr Reginald Fitz, associate professor of medicine at Harvard University Medical School, Boston, has been elected to membership on the National Board of Medical Examiners

**Free Medical Lectures**—A course of free public lectures on medical subjects, offered by the faculty of medicine of Harvard University, was begun, January 8, when N W Fradd spoke on "Balancing Your Health Budget" Dr William B Castle spoke, January 15, on anemia The following speakers will be heard in subsequent lectures, according to the report

Dr George H Bigelow January 22 The Depression and Health  
Dr Walter B Lancaster, January 29, Sparing the Eyes  
Dr Gustave P Grabfield, February 5 Rheumatism  
George H Wright D D S February 12 Color Changes in the Mouth and Teeth An Aid in Diagnosis of Systemic Disease.  
Dr William H Robey February 19 Let the Head Govern the Heart.  
Dr Henry R Viets February 26 Nerve Nerves and Nervousness  
Dr Everard L Oliver March 5 Care of the Skin and Scalp  
Dr Shields Warren March 12 Cancer and Radiation Therapy  
Dr Randall Clifford March 19 The Tuberculosis Problem Today  
Dr. Wilson G Smilie, March 26 A Discussion of the Common Cold

**Bills Introduced**—H 311 proposes to create in the state department of public health "a division of therapeutics after the plan of the Federal Government Periodical examinations shall be held for applicants who desire to become practitioners in public or private service Certificates shall be issued to those who qualify No one except those who shall qualify shall practice therapeutics as specified under this act" H 245 proposes to create a system of compulsory physical education in the schools and colleges of the state H 106, to amend the medical practice act, proposes that applicants for licenses must have received the degree of doctor of medicine from medical schools approved by the board of registration in medicine The present law requires applicants to have received that degree from a medical school "which gives a full four years' course of instruction of not less than thirty-six weeks in each year" H 116, to amend the pharmacy practice act, proposes to raise from \$10 to \$25 the fee required of those applicants who seek to be registered without examination H 208 proposes to authorize the Middlesex College of Medicine and Surgery to confer the degree of doctor of dental medicine H 365 proposes that any person feeling aggrieved by any decision of any of the boards of registration in medicine, pharmacy, or veterinary medicine, or of the board of dental examiners, may appeal to the superior court of the county in which such person resides, after receiving notice from the board of the decision objected to Under the present law the appeal is taken directly to the Supreme Judicial Court H 446 proposes (1) to require the consent of a patient before a physician may remove any organ of the body and to require the physician to submit to the patient a written explanation as to the necessity for its removal, and (2) to require the preservation of all organs removed from a patient's body until the patient directs their disposal H 477 proposes that every receptacle containing coal tar benzene shall be marked with the word "benzol" and with the word "poison" and every receptacle in which is kept any material containing benzol shall be labeled to indicate within 1 per cent the proportion of benzol incorporated in the mixture and with the word "poison"

## MICHIGAN

**Hospital News**—The new three story receiving unit hospital at Ionia State Hospital, Ionia, was dedicated, October 24

**Bills Introduced**—H 50 proposes to amend the law prohibiting adulteration or misbranding in the manufacture and sale of drugs and drug products by repealing the section which authorizes a \$6000 annual appropriation for the enforcement of the act H 66 proposes to repeal the law providing for a homeopathic medical department at the University of Michigan

**Personal**—Dr Henry D Chadwick, Detroit, was recently appointed by the governor a member of the Tuberculosis Sanatorium Commission, succeeding Dr Stuart Pritchard Battle Creek resigned—Dr Harry J Larson, Crystal Falls, has been appointed coroner of Iron County—Dr Clarence C Urquhart has been appointed part time health officer of Ironwood

**District Conference**—The medical societies of Genesee, Shiawassee and Clinton counties met in Owosso, Nov 30, 1932, for a district conference Speakers included Drs Cyrus C Sturgis Ann Arbor on pneumonia therapy Plinn F Morse, Detroit acute vascular accidents and James Milton Robb, Detroit the sinuses Drs Sturgis and Robb also spoke on anemia therapy and mastoid disease, respectively Dr Frederick C Warnshuis Grand Rapids secretary of the Michigan State Medical Society concluded the afternoon session with a talk on Head Injuries At the dinner meeting Dr Robb discussed organization opportunities, and Dr Warnshuis organization activities

## MINNESOTA

**Mueller Sentenced to Prison**—Dr Philip Mueller, Minneapolis, was sentenced, Dec 16, 1932, by Judge Leary of the district court to from ten to forty years in the state prison at Stillwater for manslaughter in the first degree. The penalty for this charge is from five to twenty years, but Mueller having a prior conviction for the same offense in 1912 was sentenced under the habitual criminal act to a double penalty. Mueller is reported to have performed an abortion, Nov 25, 1932, on a 24 year old woman of St Paul, whose death occurred Nov 27, 1932. He was arrested, Dec 7, 1932. Mueller's license to practice medicine was revoked by the state board of medical examiners in December, 1930, because of habitual indulgence in the use of morphine. He was also tried for manslaughter in 1931, but the jury disagreed. He is 71 years old.

## MISSOURI

**Hodgen Lecture**—Dr Frank C Mann, Rochester, Minn., gave the annual Hodgen Lecture of the St Louis Surgical Society, January 10. His subject was "Observations upon the Experimentally Produced Peptic Ulcer."

**Dr Jabez Jackson Health Director of Kansas City**—Dr Jabez N Jackson assumed the position of health director of Kansas City, Dec 27, 1932. The Jackson County Medical Society adopted a resolution endorsing the appointment of Dr Jackson. This is Dr Jackson's first contact in public health work, his previous experience having been mainly in the field of surgery. Early in his career, he held various college teaching positions. He has also been president of the Western Surgical Association, Missouri State Medical Association, Medical Association of the Southwest, the Kansas City Academy of Medicine, and the American Medical Association.

**Society News**—Dr Edgar W Spinzig addressed the St Louis Medical Society, Dec 6, 1932, on "Importance of the Roentgenological Diagnosis of Spontaneous and Traumatic Pneumoperitoneum", also at this meeting a symposium on cardiovascular episodes of middle life was conducted by Drs Ralph A Kinsella, Elsworth S Smith and Oswald P Falk. Dr Frank J V Krebs was elected president of the society, November 25, succeeding Dr Francis L Reder. At a meeting of the Jackson County Medical Society in Kansas City, December 20, Drs George H Thiele, Jr, spoke on "Common Fallacies in Diagnosis and Treatment of Rectal Disease," and Frederick B Campbell, "Relation of Diseases of the Rectum to General Medicine."—Dr Harry L White, St Louis, addressed the Kansas City Academy of Medicine, December 16, on "Recent Contributions to the Physiology of the Kidneys."—The Nodaway County Medical Society celebrated the sixtieth anniversary of its organization, November 11, in Maryville. Dr Eugene L Crowson, Pickering, discussed the "Early Days of the Nodaway County Medical Society", Dr William Wallis, Maryville "Practice of Medicine in Nodaway County a Half-Century Ago," and Dr Charles D Humberd, Barnard, "High Spots from the Old Minute-Books."

## NEBRASKA

**Number of Professional Licenses Issued**—Governor Bryan stated, among other things, in his message to the legislature that in the period from Dec 1, 1931, to Dec 1, 1932 the bureau of examining boards in the department of public welfare had issued 72 licenses to practice medicine, 3 to practice osteopathy, none to practice chiropractic, 176 to practice nursing, 39 to practice dentistry, 51 to practice pharmacy, 5 to practice chiropody, and 3 to practice optometry. According to the governor, the total number of practitioners licensed to practice in the state, Dec 1, 1932, was as follows: physicians and surgeons, 2,126, osteopaths, 267, chiropractors, 367, nurses, 1,385, dentists, 1,204, pharmacists, 2,518, chiropodists, 51, and optometrists, 399.

## NEW HAMPSHIRE

**Bill Introduced**—H 13 proposes to amend the provisions of the food and drug law with respect to misbranding so as to include cosmetics and disinfectants and so that labels need not bear statements of the quantity or proportion of alcohol contained in the packages to which they are affixed.

## NEW JERSEY

**Society News**—Dr John A Kolmer, Philadelphia, addressed the Atlantic County Medical Society, Atlantic City, January 13 on "Present Status of Knowledge of the Prophylaxis and Treatment of Infantile Paralysis."—Dr Edgar Mayer, Saranac Lake, N Y addressed the Hudson County

Medical Society, Jersey City, January 3, on "The Cavity in Pulmonary Tuberculosis and Its Treatment."—Dr Lewis F Barker, Baltimore, addressed the Middlesex County Medical Society, New Brunswick, Dec 21, 1932, on "Preventive Medicine from the Standpoint of the Internist Its Value to Public Health."—Drs John F Hagerty, Newark, and Nathan B Van Etten, New York, addressed the Essex County Medical Society, Newark, January 12, on specialization and cost of medical care, respectively. Drs Charles Hendee Smith and Lucy D P Sutton, New York, addressed the Bergen County Medical Society, January 10, on modern treatment of chorea.

**Tuberculosis Institute**—The Bergen County Medical Society and the Bergen County Tuberculosis Department are offering to physicians a graduate institute on tuberculosis at "Bergen Pines," Bergen County Hospital, Ridgewood. Dr Esmond R Long, Philadelphia, gave the first lecture, January 6, on pathology and pathogenesis, Dr Frederic Maurice McPhedran, Philadelphia, the second, January 13, on roentgen and physical diagnosis and Dr James Burns Amberson, Jr, New York, the third, January 20 on symptomatology and clinical course. Coming lectures will be as follows:

Dr James Alexander Miller, New York, nontuberculous disease of the chest and differential diagnosis, January 27.  
Dr Samuel B English, Glen Gardner, childhood tuberculosis, February 2 or 3.  
Dr William Charles White, Washington, D C, latest developments in tuberculosis, February 16.  
Dr Berthold S Pollak, Secaucus, treatment of tuberculosis, February 24.

## NEW MEXICO

**Society News**—Judge Milton J Helmick addressed the Bernalillo County Medical Society, Albuquerque, Dec 8, 1932, on "Where Law and Medicine Meet."—Drs Francis C Goodwin and Adolf W Muthauf, El Paso, Texas, addressed the Grant County Medical Society, Silver City, Nov 15, 1932, on common disorders of the feet and on transurethral prostatic resection.

## NEW YORK

**Society News**—Dr Leroy W Hubbard, Warm Springs, Ga, addressed the Broome County Medical Society, Binghamton, January 3, on poliomyelitis.—Dr Harry S Fish, Sayre, Pa, discussed the diagnostic value of the x-rays at a meeting of the Tioga County Medical Society, Owego, Dec 13, 1932.

**Bills Introduced**—A 72, to amend the workmen's compensation act, proposes, in effect, to make compensable any occupational disease contracted in any employment covered by the act. A 63 proposes to prohibit any experiment or investigation on a live dog. A 145, to amend the workmen's compensation act proposes to permit an employee injured in an industrial accident to select his own physician and to procure other necessary medical and nursing services, at the expense of his employer.

## New York City

**Food Exposition**—Plans for an exposition to show the relation of food to health, April 3-8, at the Grand Central Palace, have been announced. Among members of the advisory council of the New York Food and Health Exposition, which sponsors the exhibit are Drs Alfred F Hess, New York, and Milton J Rosenau, Boston, Elmer V McCollum, Sc D, Baltimore, and Lafayette B Mendel, Ph D, New Haven, Conn.

**Dr Coley Honored**—The medical board of Memorial Hospital sponsored a testimonial dinner to Dr William B Coley at the Waldorf-Astoria, on his sixty-second birthday, January 12, marking his retirement after forty-one years' service on the hospital staff. Dr John M T Finney, Baltimore, was toastmaster and speakers were Drs Charles Mayo, Rochester, Minn, George D Stewart and James Ewing and Frederick S Jones, dean emeritus, Yale University, New Haven, Conn.

**Social Hygiene Conference**—The annual regional conference of the American Social Hygiene Association for New York state and city agencies will be held in New York, January 26. Discussions will be held on "Quackery in New York City," "Clinic Problems Relating to Syphilis and Gonorrhea" and "Sex Education and Mental Hygiene." Among the speakers announced on the tentative program are Drs Alec N Thomson, Alfred C Beck, Shirley Wynne, Ira S Wile and Nathan B Van Etten all of New York. William A White, Washington D C, Thomas Parran, Jr, Albany, and Charles Edward A Winslow, Dr P H New Haven, Conn.

**Dr Schick Honored**—The annual gold medal awarded by Phi Lambda Kappa for conspicuous achievement in the medical sciences was presented to Dr Bela Schick in recognition of his work on diphtheria. The award was made at the annual

dinner of the fraternity, January 1, at the Hotel Victoria. Previous recipients of the medal are Drs Jay Frank Schamberg, Philadelphia, Solomon Solis-Cohen, Philadelphia, and Julius Friedenwald, Baltimore. Gold medals were awarded to Myron G and Maurice M Rosenbaum, students at the University of Buffalo School of Medicine for a joint paper on "The Solubility of Calcium Stearate in Solution Containing Bile and in Water."

**Courses for Practitioners**—Nine courses for qualified graduates in medicine to be given at Montefiore Hospital are announced by the administrative board on postgraduate studies in medicine of Columbia University. The courses, beginning January 30 and continuing to March 25, include diagnosis and treatment of chronic diseases of the lungs and pleura, diseases of metabolism, diabetes and nephritis, chronic diseases of the heart and aorta, clinical electrocardiography, clinical radiology of the heart and great vessels, roentgen diagnosis chronic diseases of the nervous system, physical therapy, and the diagnosis, pathology and radiotherapy of cancer. Application should be made to Dr Alan R Anderson, secretary of the board, Columbia University, 630 West One Hundred and Sixty-Eighth Street.

## NORTH CAROLINA

**Personal**—Dr Clarence A Shore, director of the State Laboratory of Hygiene, Raleigh, completed twenty-five years in that position in December. Dr Shore was instructor at the University of North Carolina before going to Raleigh in December, 1907.

## OHIO

**Bills Introduced**—S 8 proposes to provide for the aseualization of certain classes of socially inadequate inmates of state institutions. S 9 proposes to amend the state prohibition law so as to permit physicians to prescribe alcoholic liquor under the same general restrictions that are imposed by the Volstead Act and regulations promulgated thereunder.

**Changes in State Health Department**—Reorganization of the state health department into six divisions instead of nine was announced in December, 1932 by Dr Harry G Southard, state health officer. Dr Emery R Hayhurst Columbus, formerly consultant in the division of industrial hygiene, has been made chief of that division, Dr Elgie R Shaffer was made chief of the child hygiene division, and Dr Rea es W De Crow Portsmouth succeeds Dr Shaffer as head of the bureau of local health organization.

**Statement of Council on Committee Report**—In an official statement on the final report of the Committee on the Costs of Medical Care, the council of the Ohio State Medical Association announced its agreement with the minority section of the report. The statement says that the majority report practically ignores the fact that the medical profession is well organized in scientific societies county and state, with the primary purpose under its constitution of promoting the science and art of medicine and the protection of public health. The council advocated (1) payment locally for services to the indigent (2) evaluation and coordination of medical service by local communities (3) coordination of urban and rural services, (4) restoration of the general practitioner to the central place in medical practice (5) opposition to corporate practice of medicine and (6) careful trial of methods that can be rightly fitted into present institutions and agencies without interfering with the fundamentals of medical practice.

**Society News**—Dr Arthur T McCormack state health officer of Kentucky Louisville, addressed the Cleveland Academy of Medicine Dec 16 1932 on "Public Health—A Responsibility of the Medical Profession." Drs Torald Sollmann and Harold N Cole and Katharine I Henderson AB among other addressed a joint meeting of the experimental medicine section of the academy and the Cleveland section of the Society for Experimental Medicine and Pathology Dec 9 1932 on a study of the excretion of bismuth—Dr Charles F Geschickter Baltimore was the guest speaker at the annual meeting of the Union Medical Association in Akron January 11 delivering two addresses on pathological changes of bone and on malignant conditions. Dr Alexander P Ormond Stow Roll H Marl with Vincent C Malloy and Robert T Allison Jr Akron reviewed medical progress in 1932—Dr Curtis J Purman Baltimore addressed the Cincinnati Academy of Medicine January 16 on Hodgkins Disease. Dr Michael Scott Kearns will speak January 30 on Relationship of the Secret Office to Medical Problems, and Dr Leon Schiff on chlorhydria.

## OKLAHOMA

**Bills Introduced**—H 43 proposes to prohibit the possession and distribution of veronal, barbitol, luminal, chloral hydrate, bromidia, somnos, marihuana, Indian hemp, hasheesh and loco weed, except on the prescription of a lawfully authorized practitioner of medicine, dentistry or veterinary medicine. H 48, to amend the law authorizing the governor to prescribe regulations for the sale of alcohol to hospitals, clinics, laboratories and other scientific institutions, proposes that alcohol purchased from federal bonded warehouses or from wholesale drug houses, in compliance with the laws of the United States, by hospitals, clinics or laboratories for routine medical use, may be transferred without a permit being first secured from the governor or without the purchaser being bonded under the provisions of the law.

## OREGON

**Personal**—Dr Alfred B Peacock, Marshfield, was recently elected mayor of the town—Dr Robert C Coffey, Portland, was made an honorary member of the French and Italian societies of urology and surgery during a recent trip abroad.

## PENNSYLVANIA

**Annual Meeting**—Dr Dean Lewis, Baltimore, President-Elect of the American Medical Association, and Dr Olin West, Chicago, secretary of the Association, addressed the Locom County Medical Society at its annual meeting, January 11, at Williamsport on "Tumors of Bone" and "Social and Economic Problems of Modern Medicine," respectively. Dr Lewis also spoke at the annual banquet in the evening on "The Modern Challenge to the Medical Profession," and Dr West on "The Functions of County Medical Organizations."

**Graduate Study Day**—The second "Post Graduate Study Day" at Geisinger Memorial Hospital, Danville, was held, Nov 30, 1932. A symposium on nontuberculous lesions of the chest was presented by Drs Francis D W Lukens Philadelphia, Ross K Childerhose, Allenwood, Carl E Ervin, Francis W Davison Edward McG Hedgpeh, Claude W Ashley and Robert Y Grone. The afternoon was devoted to a symposium on organic diseases of the stomach in which the participants were Drs Thomas Grier Miller, Philadelphia, Harold L Foss, Henry F Hunt and Sydney J Hawley.

**Society News**—Dr George A Holliday addressed the Pittsburgh Urological Association, January 13, on syphilis—Dr Olin West, secretary and general manager of the American Medical Association, addressed physicians of the sixth councilor district, January 10, at Altoona, on social and economic problems of modern medicine—The Mercer County Medical Society recently adopted a resolution commending the action of the members who filed the minority report of the Committee on the Costs of Medical Care—The twenty-seventh annual conference of secretaries of county medical societies and medical editors was held in Harrisburg, Dec. 6 1932. Among other speakers Dr Walter F Donaldson Pittsburgh, spoke on "The Rights of the Medical Profession" and Dr Donald Guthrie Sayre, on "Important Responsibilities of the Medical Profession"—Dr Maurice C Pincoffs, Baltimore addressed the York County Medical Society, York, Dec 17, 1932, on "Typhus and Typhus-like Fevers."

## Philadelphia

**Hospital News**—Dedication of the new Greatheart Maternity Building, an addition to Temple University Hospital, took place Dec 13, 1932 with ceremonies at which Drs Jesse O Arnold and Ralph M Tyson were the principal speakers.

**Personal**—Dr Charles W Burr, professor of neurology at the University of Pennsylvania Graduate School of Medicine has presented 19000 volumes from his general library to the university—Dr Harvey Evert Kendig has been appointed dean of the school of pharmacy of Temple University, succeeding the late Dr John R Vinehart.

**Pharmacy Night**—The Philadelphia County Medical Society will hold a joint meeting with the Philadelphia Association of Retail Druggists, January 25. Addresses will be presented by

John M Woodside PhC member of the state board of pharmacy  
Pharmacy's Part in Safeguarding the Public Health  
Clarence A Pickett PhG secretary of the Philadelphia Association  
The Constructive Influence of Retail Druggists Associations  
John C Walton PhC president Pennsylvania Pharmaceutical Association  
Professional and Commercial Aspects of Pharmacy  
Dr George C Yeager Dispensing by Physicians

**University News**—Temple University School of Medicine recently reorganized its heart clinic under the supervision of Dr John A Kolmer recently appointed professor of medicine. Drs Hugo Roesler and Joseph B Wolfie head the staff of

the clinic, which will be open two evenings each week for examination and treatment of employed persons who cannot attend day clinics—Dr Herbert M. Evans, Herzstein professor of biology, University of California Medical School, Berkeley, delivered the annual Alpha Omega Alpha Lecture of Jefferson Medical College, January 11, on "Hormones of the Anterior Hypophysis"

### SOUTH CAROLINA

**Society News**—The Cherokee County Medical Society was reorganized at a meeting in Gaffney, Dec. 1, 1932, at which physicians of the county were entertained by Dr. and Mrs. John H. Cathcart—Dr. James D. Whaley, Charleston, was elected president of the South Carolina Urological Association at the annual meeting in Florence, November 1, and Dr. Paul W. Sanders, Jr., Charleston, secretary—The Marlboro County Medical Society held its annual meeting, January 11, in Bennettsville. Among the speakers were Drs. James R. Young, Anderson, president, South Carolina Medical Association, on "Management of Skull Fractures and Brain Injuries", Hamilton W. McKay, Charlotte, N. C., "Pediatric Urology", Edgar A. Hines, Seneca, secretary of the state medical association, "1933 and Its Unusual Challenge to Organized Medicine"

### SOUTH DAKOTA

**Personal**—Dr. Floyd Coslett, assistant superintendent, South Dakota State Sanatorium for Tuberculosis, Sanator, will succeed the late Dr. Rollin E. Woodworth as superintendent of the institution

**Bills Introduced**—H. 3, to amend the pharmacy practice act, proposes (1) to permit persons other than registered pharmacists to sell in original packages patent or proprietary medicines and (2) to permit any person of good moral character who conducts a retail place of business to be licensed annually by the state board of pharmacy to sell in original packages simple household remedies. H. 2 proposes to require applicants for licenses to practice any form of the healing art, as a condition precedent to examination by their respective licensing boards, to pass examinations in anatomy, physiology, chemistry, bacteriology and pathology, to be given by a board of examiners in the basic sciences, none of whose members shall be a licensed practitioner of the healing art or any branch thereof

**Society News**—Dr. Augustus G. Pohlman, dean, University of South Dakota School of Medicine, Vermilion, addressed the Sioux Falls District Medical Society, Sioux Falls, Dec. 13, 1932, on "The Heredity-Environment-Endocrine Complex"—Drs. James F. Taylor, Sioux City, Iowa, and Hermenegild Klima, Tyndall, among others, addressed the Yankton District Medical Society, Dec. 16, 1932, on "Misplaced Placentas and the Effect on Labor" and "Undulant Fever in South Dakota" respectively—At the semiannual meeting of the South Dakota Academy of Ophthalmology and Otolaryngology in Mitchell, Dec. 4, 1932, speakers included Drs. Charles E. Yates, Lawrence, Kan., on trachoma, Ralph K. Miller, Madison, osteomyelitis of the petrous portion of the temporal bone, and John B. Gregg, Sioux Falls, intra-ocular tumors. Dr. Charles N. Spratt, Minneapolis, presented motion pictures on cataract and glaucoma, and Dr. Ray A. Kelly, Mitchell, presented cases of carcinoma of the eyeball and thrombosis of the retinal artery

### TENNESSEE

**Bills Introduced**—H. 26 and S. 48 propose to create a state department of criminal identification and apprehension to be given the duty of acquiring, collecting, classifying and preserving criminal identification records

**Society News**—Dr. James B. Neil addressed the Knox County Medical Society, Knoxville, Dec. 6, 1932, on treatment of prostatic obstruction—Dr. Tom B. Zerfoss addressed the Nashville Academy of Medicine, Dec. 6, 1932, on acute infectious mononucleosis

**Health at Nashville**—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended January 7, indicate that the highest mortality rate (23.1) appears for Nashville, and the rate for the group of cities as a whole 13.6. The mortality rate for Nashville for the corresponding week in 1932 was 16, and that for the group of cities 13. The general death rate for the eighty-five cities for the fifty-two weeks of 1932 was 11.2 compared with 11.8 for 1931. Caution should be used in the interpretation of weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate

### TEXAS

**Dallas Clinical Conference**—The Dallas Southern Clinical Society has announced that the fifth spring clinical conference will be held, March 27-31, with headquarters at the Baker Hotel. The program will include general assemblies each morning, graduate lectures, round table luncheons, afternoon clinics, an open meeting the first evening, and four evening symposiums. Speakers announced are Drs. Louis A. Bue, Rochester, Minn.; Philip H. Kreuscher, Joseph Brennemann and Percival Bailey, Chicago; Joseph F. McCarthy, New York; Arthur E. Hertzler, Halstead, Kan.; Eugene R. Lewis, Los Angeles; Harry S. Crossen, St. Louis; Lewellys F. Barker, Baltimore; Cyrus C. Sturgis, Ann Arbor, Mich.; and Charles C. Dennie, Kansas City, Mo. Dr. James Shirley Sweeney, Dallas, is chairman of the executive committee arranging the conference

### WISCONSIN

**Lectures at the University**—Dr. Evarts Ambrose Graham, Babby professor of surgery at Washington University Medical School, St. Louis, delivered a lecture before the University of Wisconsin Medical Society, Dec. 15, 1932, on "The Hepatic Factor in the Mortality After Operations on the Biliary Tract". Dr. Ira H. Lockwood, Kansas City, Mo., gave a lecture at the university, Dec. 6, 1932, under the auspices of Alpha Omega Alpha and Sigma Sigma, on "A Roentgen Study of the Mammary Gland". Karl F. Meyer, Ph.D., professor of bacteriology and director of the Hooper Foundation for Medical Research, University of California, San Francisco, addressed the university medical society, January 8, on psittacosis

### GENERAL

**Examinations in Obstetrics and Gynecology**—At the recent examinations conducted by the American Board of Obstetrics and Gynecology in Los Angeles, Dec. 7, 1932, thirty-three candidates were examined. Of the number, twenty-six were approved, three were conditioned and four failed

**Exhibit on Tropical Medicine**—Prof. W. H. Hoffmann of the Finlay Laboratory, Havana, Cuba, secretary of the section of tropical medicine, parasitology and pathologic anatomy, Pan-American Medical Association, invites specialists of the Latin American countries to send interesting material and specimens to the exhibition of tropical medicine and pathology at the session to be held in Dallas, Texas, March 21-26

**Resolution on Foreign Medical Education**—A prompt investigation of foreign medical education with special reference to licensure of graduates of foreign schools who wish to practice in the United States was urged in a resolution unanimously adopted at the recent annual meeting of the Association of American Medical Colleges in Philadelphia. The resolution expresses the conviction of the association that indiscriminate licensing of both foreign-born and American-born graduates of such foreign schools will result in lowering the quality of medical service in the United States. It was further pointed out that achievements of graduates of foreign schools have been appreciably lower in the past ten years than those of acceptable American and Canadian schools and that increasingly large numbers of American students who have been denied admission to American schools have gone abroad to study with the intention of returning to practice in this country

**Award to Dr. Abel**—Dr. John J. Abel, Baltimore, is the first recipient of the Philip A. Conne Medal, a new scientific honor award "for advancing knowledge of human medicine," it was announced, Dec. 25, 1932. Dr. Abel, who was professor of pharmacology at Johns Hopkins University School of Medicine, Baltimore, from 1893 until his resignation in June, was president of the American Association for the Advancement of Science, during the last year. The medal, which was presented to him at the association's recent annual meeting in Atlantic City, is endowed with funds furnished by Mrs. Madelyn Conne of New York and New Orleans in memory of her husband. The Chemists' Club of New York will administer the endowment for awarding the Conne Medal. Other honors given to Dr. Abel include the Willard Gibbs Medal of the Chicago Section of the American Chemical Society, 1926, and the gold medal of the Society of Apothecaries of London in 1928. He is the editor of the *Journal of Pharmacology and Experimental Therapeutics*

**Medical Bills in Congress**—Changes in Status. S. Res. 271 has been indefinitely postponed, proposing to request the Surgeon General of the Public Health Service to make inquiry among the leading physicians and chemists in the United States as to the amount of alcohol a beverage may contain without being intoxicating. S. 572, providing that the United States



shall cooperate with the several states in promoting the welfare and hygiene of mothers and infants, was reached on the Senate calendar, January 3, but consideration of the bill was prevented by Senator Vandenberg, Michigan. H J Res 527 has passed the Senate and House, extending to March 3, 1933, the time within which the joint committee investigating the operation of the laws and regulations relating to the relief of veterans shall report. **Bills Introduced** S 5219, introduced by Senator Shipstead, Minnesota, proposes to provide funds for cooperation with the Minnesota state board of control in the extension of the Minnesota State Sanatorium at Ah-Gwah-Chung, Minn. S 5251, introduced by Senator Shipstead, Minnesota, proposes to authorize the Reconstruction Finance Corporation to make loans to any public or private hospital organized under the laws of any state on the same terms and conditions, and subject to the same limitations, as are applicable in the case of loans to financial institutions. S 5318, introduced by Senator Davis, Pennsylvania, provides for the forfeiture of vessels, vehicles, or other means used to transport or conceal unstamped narcotic drugs, or to facilitate the purchase and sale thereof.

**Report of Commonwealth Fund**—During the year ended Sept. 30, 1932, the Commonwealth Fund of New York expended \$1,573,438.09 of which more than half, \$808,457.23, was devoted to support of medical and hospital service in rural areas, medical research and public health projects. Activities in advancement of child guidance and mental hygiene accounted for \$334,252.17. The fund sponsors six rural hospitals for the double purpose of making modern medical service directly available and of attracting young physicians to rural areas. Public health units are supported in Massachusetts, Tennessee and Mississippi; in these states also the state departments of health with aid from the fund have set up traveling field units to visit local health officers, study their work and suggest possible improvements. Scholarships were given during the year to thirty-two medical students to enable them to prepare for rural practice, and forty-five practicing physicians were given opportunity for graduate study in medical centers. Thirty-six clinical institutes for practicing physicians were held. In Virginia the fund sponsored courses in obstetrics in selected centers throughout the state, this being the only new activity in which the fund engaged during the year. In the field of research the fund granted \$36,200 to the Massachusetts State Department of Health to continue a study of pneumonia. Other projects included study of the growth and development of healthy children, multiple sclerosis, dental decay, undulant fever, and trachoma. For the furtherance of mental hygiene the fund has shared the cost of a nation-wide survey of the teaching of psychiatry, provided thirty-five scholarships for advanced study and maintained the Institute for Child Guidance in New York. The work of the institute was curtailed, however, and will be discontinued altogether in June 1933.

**American College of Physicians**—The seventeenth annual clinical session of the American College of Physicians will be held in Montreal, Canada, February 6-10, under the presidency of Dr. Francis M. Pottenger, Monrovia, Calif. The John Phillips Memorial Prize Oration will be delivered Monday evening, February 6, by Dr. William B. Castle, Boston, on "Etiology of Pernicious Anemia and Related Macrocytic Anemias." The prize will be presented to Dr. Castle at the annual convocation Wednesday evening, February 8, when Dr. Pottenger will deliver his official address and Sir Andrew MacPhail, Montreal, an address on "The Source of Modern Medicine." The annual banquet will be held Thursday evening with Stephen Leacock, professor of political economy at McGill University, as the speaker on "The Waste Spaces of Modern Education." Among features of the general sessions will be a symposium on endocrinology in which the participants are to be Dr. Charles H. Best, Toronto, Ont., Edward A. Doisy, Phil D., St. Louis, Frank A. Hartman, Phil D., Buffalo, Dr. James B. Collip, Montreal, Dr. Archibald D. Campbell, Montreal, Oscar Riddle, Phil D., Cold Spring Harbor, N. Y., and Dr. Ernest Gellhorn, Chicago. At a session devoted to pulmonary diseases speakers will include Drs. Reginald Fitz, Boston, Charles H. Cooke, Asheville, N. C., Lador David Bronfin, Denver, Edward W. Archibald, Montreal, L. Rist, Paris, France, and Campbell P. Howard, Montreal. Heart disease will be discussed among others by Drs. Paul D. White, Boston, John H. Musser, New Orleans, Duncan A. L. Graham, Toronto, James C. White, Boston, and Edwin Cowles, Andrews, Baltimore. A group of papers on diseases of the nervous system will be delivered by Dr. George C. Hile, London, Ont., Roy G. Hoskins, Boston, Walter G. Penhield, Montreal, Thomas P. Sprunt, Baltimore, and Alfred Stengel, Philadelphia. Morning sessions will be entirely devoted to clinics and demonstrations in hospital and laboratory at the McGill University School of Medicine and the University of Montreal Faculty of Medicine.

## PHILIPPINE ISLANDS

**Medical Activities**—Dr. Basilio J. Valdes, president of the board of medical examiners of the islands, and Col. Kent Nelson, department surgeon, Philippine Department, U. S. Army, addressed the Manila Medical Society in October on "Our Relations to the Public and to the Medical Profession" and "Medical Ethics from the Army Officer's Viewpoint," respectively. The board of medical examiners recently recommended to the Secretary of the Interior revocation of the license of Dr. Juan B. Unson to practice medicine in the Philippines. Dr. Unson was found guilty of unprofessional conduct in that he gave injections of morphine to persons whose condition did not warrant the treatment.

## PUERTO RICO

**Medical Association of Puerto Rico**—Dr. Rafael Bernabe, San Juan, was elected president and Dr. Eduardo Garrido Morales, Santurce, secretary, of the Medical Association of Puerto Rico at the annual meeting, in Santurce, Dec. 9-11, 1932. Clinics were held Friday morning at the University Hospital and Saturday morning at municipal hospitals. The scientific session occupied Saturday afternoon and Sunday. Among the speakers were:

Dr. Franklin M. Hanger, Jr., New York, on Recognition and Treatment of Common Disorders of the Heart  
William Hoffman, D. Sc., San Juan, Tapeworm Infestation in Man  
Dr. Basilio Davila, Rio Piedras, Tumor of the Brain  
Dr. Ramon M. Suarez, Santurce, Clinical Studies on Uncinariasis  
Dr. Isaac F. Gonzalez Martinez, Santurce, Cancer in Puerto Rico  
Dr. Rafael Lopez Nussa, Ponce, New Gynecologic Methods  
Dr. Bailey K. Ashford, San Juan, Contribution of Hematology to the Diagnosis of Diseases in the American Tropics  
Dr. Enrique Koppisch, San Juan, Tuberculosis in Puerto Rico

## FOREIGN

**Journal of Plastic Surgery**—A journal to be known as *Revue Française de Chirurgie Réparatrice, Plastique et Esthétique* has recently been launched by Drs. Louis Dartigues, president and founder, and Charles Claupe, secretary-general, of the French Society of Reporative, Plastic and Esthetic Surgery. Information may be obtained from Dr. Dartigues, 81, rue de la Pompe, or Dr. Claupe, 1, rue Singer, Paris, 16.

**Society News**—Dr. Paul Ferreyrolles, Paris, was elected president of the International Society of Medical Hydrology at its meeting in Paris, Oct. 17-20, 1932, and Dr. Edward P. Poulton, London, chairman of the council. Dr. Walter S. McClellan, Saratoga Springs, N. Y., represented the United States at this meeting. The next session will be held in Toulouse in 1933.—Dr. Frank Douglas Turner, Colchester, has been elected president of the Royal Medico-Psychological Association, to take office this month.—A British Health Resorts Association has been organized with Dr. Alfred Cox, recently retired secretary of the British Medical Association, as secretary.

**International Congresses in 1933**—The following international congresses and conferences to be held in Europe during 1933 have recently been announced:

International Congress of Ophthalmology, Madrid, in April. Information may be obtained from Dr. F. Poyales Olazaga, 3, Madrid.  
International Congress of Pediatrics, London, July 18-20.  
International Society of Orthopedic Surgery, London, July 19-22.  
International Professional Association of Physicians, London, September 7-9.  
International Congress on Mental Hygiene, Rome, in September.  
International Congress for the Protection of Childhood, Paris, July 4-9. Headquarters, 26, Boulevard de Vaugrard, Paris.  
International Hospital Congress, Knocke-sur-Mer, Belgium, June 28-30.  
International Gout Conference, Berne, Switzerland, August 10-12.  
International Congress on Military Medicine and Pharmacy, Madrid, May 29-June 4.

**Turkey Closes Some Narcotic Factories**—Severe state control and limitation of narcotics is now in effect in Turkey in accordance with a decree adopted at a meeting of the cabinet, Dec. 25, 1932. According to the *New York Times* it was decided that three recently closed narcotic factories in Istanbul will not be allowed to reopen, that poppy cultivation will be limited to meet medicinal opium needs, that Turkey will adhere to the international Hague and Geneva narcotics traffic accords, and that special tribunals will be created to try narcotics smugglers and illegal manufacturers. The cabinet decree concluded it was said: "Thus we accomplish our most modern and most civilized duty toward the Turkish nation and humanity." Because of the unrestricted manufacture of narcotics in Turkey the report continued, Istanbul long had been the center of the illicit narcotic traffic until the Popular party, Turkey's sole political party, launched its program of state control of opium. It was said that the Turkish government decided last spring to turn over the manufacture and export of narcotics to a syndicate controlled by a government bank. The producers also are interested in the syndicate, the newspaper reported.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Dec 24, 1932

#### Improvement in the Health of School Children

In his report for 1931 Sir George Newman, chief medical officer of the board of education, states that, in spite of industrial depression and the need for national economy, no measurable physical ill effect is yet shown in the child population. The percentage of children found suffering from definite defects (excluding dental defects and uncleanness) was 20, of which 9 per cent were due to defects of vision and 6 per cent to adenoids and enlarged tonsils. Sir George finds that a new kind of self respect has grown up among our people, a health conscience. The children as a whole are cleaner, better in physique, better fed, better clothed and better nurtured than they have ever been as long as records have been kept. This evidence is clinched by the simple fact that their parents have been through the same hygienic discipline in the schools.

#### DECLINE IN THE INCIDENCE OF DISEASES

Ringworm, blindness, malnutrition, heart disease, dental decay, tuberculosis and certain infectious diseases have declined among school children in the last twenty years. The decline in the mortality of tuberculosis under 15 years of age from 1921 to 1930 was 36 per cent, 44 per cent and 56 per cent for pulmonary, bone and joint, and abdominal tuberculosis, respectively. The mortality of measles, scarlet fever, diphtheria and whooping cough under 15 years of age has declined steadily for a generation. Comparing the period 1891-1895 with 1926-1930, the fall in annual mortality per million persons living under 15 years of age was: measles, from 1,174 to 381, scarlet fever, from 498 to 55, diphtheria, from 896 to 302, and whooping cough, from 1,151 to 387. The standardized death rate of children aged from 5 to 10 years declined between 1906 and 1930 from 3.6 to 2.3 per thousand, between 10 and 15 years, from 2.1 to 1.5. The mortality rate of children under school age has been almost halved since 1907 (principally by better motherhood), and the death rate of persons between school age and 40 has shown a steady and uniform decline.

#### RAINFALL AND RHEUMATISM

In a study of acute rheumatism, it is stated that a rainfall below the average for any season of the year appears to be the most potent factor in increasing rheumatic incidence. The combination most likely to give an increase is a rainfall below normal, a diminution in the amount of sunshine and a low temperature. An opposite effect is produced by a rainfall above normal, more than the average sunshine, and a high air temperature.

#### Treatment of the Virus Diseases

In a lecture before the Pharmaceutical Society of Great Britain, Sir Henry Dale, F.R.S., director of the National Institute for Medical Research, said that a great and practically untouched problem was the treatment of those infectious diseases caused by viruses so minute that they were beyond the range of the most advanced microscopic technic. To such viruses, so inaccessible to investigation, were due smallpox, chickenpox, measles, mumps, whooping cough, influenza, the common cold, infantile paralysis, rabies, dog distemper, foot and mouth disease, cattle plague, fowl plague and swine fever, "a grisly enough array of subtle and invisible enemies for man and his animal servants." Modifications of the virulence of the virus in various ways or use of a serum from an individual who has acquired a natural immunity has enabled prevention to be applied successfully in several cases and even curative treatment to a minor

extent. No doubt progress will be made on these lines. But for the treatment of these diseases by drugs there exists no scientific basis and no definite record of practical achievement. What will chemistry and pharmacy be able to offer in the future in the way of specifics which cut short an attack of these diseases? At present the outlook is anything but hopeful. Chemotherapy in its present lines of development shows much of achievement and more of promise for the treatment of infections by the relatively complex organisms of the protozoa, but nothing of either for the treatment of infections by the simpler bacteria. It seems remotely improbable that, along similar lines, substances will be found that will directly attack the still more elementary viruses.

#### Should Schools Be Closed Because of Poliomyelitis?

In a previous letter (*THE JOURNAL*, Nov. 19, 1932, p. 1792) the controversy aroused by the decision to close Stowe school because of two cases of acute poliomyelitis was reported. The ministry of health issued advice against such closure and this was endorsed by the *Lancet*, on the ground that closure of a residential school in which poliomyelitis had appeared would tend to distribute the disease more widely in the community. The head master and medical officer of Stowe school replied that in dispersing the school they sent to the parents a strongly worded request that the boys on returning home should be kept away from other young people for a period of three weeks. They now state in a letter to the *Times* that the parents appear to have conscientiously followed this advice, for inquiry shows that since the dispersal of the school at the beginning of October no case of poliomyelitis has resulted in the country. They argue that poliomyelitis is conveyed by carriers and that when a first case in a community of young people is followed by a second the presence of carriers must be assumed. It therefore becomes imperative to separate the members of the community from one another until the carriers cease to carry. The boys in a boarding school cannot be separated from one another while they remain at school. If the school had been kept together, more cases would almost certainly have occurred and when the school broke up at Christmas a greater number of carriers would have been disseminated over England at a time when all the children of the country would have been in their homes. Moreover, the school has no power to detain boys forcibly if their parents wish to remove them, and the correspondence showed that a large majority of the boys would have been removed immediately on the occurrence of the second case if the dispersal of the school had not taken place.

#### Birth Control

Though the birth control movement has encountered much ecclesiastical opposition, it has received support in influential social and medical circles. The annual report of the Society for the Provision of Birth Control Clinics shows that there are now sixteen affiliated centers throughout the country and during its ten years' work advice has been given to 38,000 persons. It is claimed that in this time of unemployment the need for the centers is greater than ever and that letters received from women who live in areas remote from the clinics show the necessity for widespread extension of clinics and for the training of medical students in contraceptive measures which few now receive. The society is doing its best to train as many students and physicians as possible.

The report of the medical officers of the clinics states that notwithstanding the holding of the International Birth Control Conference at Zurich in 1930, they found no grounds for changing the methods followed at the clinics for seven years which are substantially the same as those of Mrs. Margaret Sanger's clinic in New York. The ideal contraceptive has not yet been discovered.

### Training the Civil Population in Gas Defense

All Voluntary Aid and Red Cross detachments are receiving instruction in methods of protection against gas as the result of the decision of the International Red Cross Committee, taken in 1928. In every country except Great Britain, joint councils have been formed and instruction is given on the lines suggested. In this country it was found impossible to set up an official joint committee, but the British Red Cross Society, in order to carry out the spirit of the international committee's recommendation, added an antigas course to its regular training scheme and has issued a pamphlet entitled "First Aid in Chemical Warfare," which is now being used all over the country. The full scheme of the International Red Cross Committee, now in operation in every country in Europe, includes: 1. Distribution of popular information on chemical warfare. 2. Enrolment of personnel for antigas first aid and also for transport and decontamination. 3. Registration of buildings suitable for use as gas centers and gas-proof centers. 4. Fitting up of collective shelters. 5. Provision of decontaminating materials and antigas equipment. 6. Organization of places for the treatment of gas patients, such as aid posts and hospitals.

### Death of E. Treacher Collins

The death of Mr. Treacher Collins removes a leading figure in British ophthalmology. Born in 1862, he was educated at University College School and the Middlesex Hospital. In 1884 he was appointed house surgeon to the Moorfields Hospital, the home of British ophthalmology, where later he made a reputation which ranks him among such masters as Mackenzie, Bowman, Nettleship, Critchett and Priestley Smith. In 1887 he was appointed pathologist and curator of the museum. He thus acquired his minute knowledge of the anatomy and pathology of the eye, which was the foundation of his work. In 1890 he was elected surgeon to the hospital, a post which he held for twenty-seven years. He was appointed Hunterian professor at the Royal College of Surgeons and in 1893-1894 delivered the Hunterian lectures on the Anatomy and Pathology of the Eye, which formed the basis of a treatise entitled *Researches into the Anatomy and Pathology of the Eye*, published in 1896 and recognized as an original and valuable work. In 1915 he received the Nettleship prize from the Ophthalmological Society in recognition of researches in diseases of the eye, and in 1917 he was elected president of the society. In 1917-1918 he was president of the Council of British Ophthalmologists. In 1922 he was the official representative of the British government at the American Ophthalmological Congress. In 1924 he delivered the Montgomery lecture before the Royal College of Surgeons in Ireland on the Evolution of Pupillary Reflexions. In 1929 he was president of the International Congress of Ophthalmologists held at Amsterdam. In 1911 he published a treatise on the Pathology and Bacteriology of the Eye, which proved valuable to specialists. He contributed more than a hundred original papers to the Transactions of the Ophthalmological Society and many others to the Moorfields Reports and to the Section of Ophthalmology of the Royal Society of Medicine. With Mavou he produced the well known book on the Pathology of the Eye. In 1929 he published the *History and Traditions of the Moorfields Eye Hospital* which was a history of the origin and development of British ophthalmology enriched with sketches of the great men who made it and their portraits. It was regretted that with characteristic modesty he omitted a portrait of himself. He was universally respected both at home and abroad not only as a great ophthalmologist but as a man single minded in his devotion to science, always willing to help a colleague and never harboring a thought of envy. Sir John Parsons, another leader of British ophthalmology, considers that in recent years no one has had more widespread influence on the teaching of the fundamental data of ophthalmology than Treacher Collins.

### PARIS

(From Our Regular Correspondent)

Dec 7, 1932

### The Interruption of Pregnancy in Tuberculous Women

Legislation against criminal abortion is rather severe in France. Furthermore, many obstetricians disapprove of the interruption of pregnancy in tuberculous women. They are inclined to doubt that the advance of tuberculosis is inevitable in the gravida. Inoculation with the BCG vaccine is regarded as furnishing sufficiently effective protection to the child. It is a common belief that the diagnosis of tuberculosis is reached too readily in many cases and that in reality the purpose of the abortion is for personal reasons. Professor Brindeau, who occupies a chair of obstetrics at the Faculté de médecine de Paris, holds that the indications for abortion in tuberculous women are rare. In any event, pregnancy should never be interrupted after the fourth month, and not before unless the tuberculosis has been obviously aggravated. Brindeau stated that, since tuberculosis varies considerably with the patient, it is impossible to give a prognosis in all cases. His statistics, covering a period of three years, include only gravidæ admitted to hospital at the request of qualified phthisiologists. During the years 1928, 1929 and 1930, in fifty-four cases of tuberculosis in pregnant women, he decided to interrupt pregnancy in sixteen instances. Only three of these patients have since died. On the other hand, he decided to take an expectant attitude in thirty-eight other cases. Of the latter group, twenty-five have since died. In other words, the mortality from tuberculosis was much lower when abortion was done.

### The Public Health Budget

The deficit of nearly \$500,000,000 in the annual national budget of France has brought about drastic retrenchments. All the public services have suffered heavy reductions in their appropriations. One of the most regrettable reductions amounting to more than \$30,000,000, affects appropriations of the public health service. The time is particularly inopportune. Recent statistics show that the population of France is decreasing, not as a result of the birth rate which is increasing, but owing to an increase of the general mortality. It is evident that the mortality increase is in direct relation to slow progress in hygiene. The situation will not be improved much by a recent decision of the minister of agriculture, who in order to assure the consumption of the unusually large wheat crop, ordered that flour for the manufacture of bread must be bolted on the basis of only 66 per cent of the whole grain in place of from 75 to 80 per cent, as heretofore. Thus, one can obtain only 60 Kg of flour from a 100 Kg sack of wheat. This regulation makes it possible to use from 10 to 15 per cent more wheat than formerly. But this 66 per cent flour has too little of the outside layers of the grain that is too little gluten, vitamins and phosphates. Therefore the general health of the population of France is going to suffer. Politics is playing a part in the situation. The annual campaign against tuberculosis through the sale of special tuberculosis seals threatens to be checked this year by a peculiar state of affairs. The difficulties of the government have made it necessary to reduce the salaries of civil service employees. There is a general protest against such action. The civil service employees have formed powerful syndicates that threaten to strike. Teachers have decided to refuse to aid in the sale of the tuberculosis seals. This attitude has appeared strange, because from funds collected last year in this manner the committee allotted \$20,000 to create a sanatorium for teachers.

### International Association for Prevention of Blindness

The Association internationale contre la cécité organized only two years ago held its regular meeting in Paris Nov. 12-1932. The minister of public health presided. The lar-

attendance included, among other foreign members, Mr Bernard Cridland and Bishop Harman of England, Madame Winifred Hathaway of New York, Professor Bartels of Dortmund, Van Duyse of Belgium, Jitta of The Hague, and von Szily of Germany. The meeting was devoted to the preservation of eyesight in children and to the promotion of schools to combat amblyopia. Mr Pierre Villey emphasized the need of such schools. While institutes for the blind have been created in many countries, persons with dim or impaired vision have been neglected in most countries. Special schools should be created in which methods are used that will permit persons with amblyopia to enjoy the same educational advantages as children with normal vision. Bishop Harman explained that in England a large number of such schools had been created, the first dating back to 1908. There are at present, in London, thirty-seven classes in fifteen schools, with 850 pupils. In addition, 100 places are reserved for amblyopic children in the schools of secondary instruction. Madame Hathaway announced that in the United States there are 409 classes for amblyopic children, located in 118 cities and 22 states. Mr Bartels described the organization of such schools in Germany and the methods of instruction adopted. The cost per pupil in these schools is, of course, greater than in an ordinary school for children with normal eyesight but is nevertheless much less than the cost of instruction per pupil in schools for the blind. Mr Auguste Dufour of Lausanne stated that there had been difficulty in creating such schools in Switzerland. There was, however, one school opened at Zurich in 1925 and another at Basel in 1930. Mr Radslob spoke of the school created at Strasbourg in 1908 and emphasized the need of creating more such schools in France, which has been outstripped in this regard by other countries. Mr Montbrun, general secretary of the Comité français, stated that in the schools of Paris the proportion of amblyopic children is as 1 to 500-750. The creation of a special class for such pupils, in one school of Paris, has been decided on by the minister of public instruction.

#### A Discussion of Malaria

At a meeting of the Société de médecine et d'hygiène tropicales, Mr P. Decourt reported a case in which a person who had formerly had an attack of malaria in the colonies returned to France and, following a slight traumatism, had a recurrence of malaria after a long period of latency, a rare observation. In such cases there is a possible danger of infection of the donor in connection with a blood transfusion. Decourt discussed the preventive administration of quinine to the donor and to the recipient during the days preceding a blood transfusion. During the discussion, Professor Brumpt emphasized the rarity of the revival of a malaria of old standing. He said that it is difficult to be certain that a reinfection has not occurred. This raises the question of the curability of malaria, which appears to be doubted by many, just as many doubt also the absolute curability of syphilis. Mr Flandin reported a case of recurrence of malaria at the end of five years and another at the end of nineteen years. He added that cases of transmission of malaria from recipient to donor in blood transfusion are not so exceptional. Mr Lorondo suggested that, in order to make certain that malaria was eliminated, the test of procedures that reactivate it such as roentgen and ultraviolet rays and the arsphenamines be applied. Mr Marcel Leger closed the discussion by saying that, in his opinion, one may admit the possibility of a definitive recovery from malaria, if properly treated, within an average period of three years. However, cases of recurrence after long intervals are well authenticated. *Plasmodium vivax* and *Plasmodium malariae* are unquestionably more difficult to dispel than is *Plasmodium praecox*. The longest period of latency of *Hematozoon malariae* (sixty years) was reported in 1907 by Rist and Boudet, who

found the schizonts of *Plasmodium malariae* in a patient aged 70, who had left the colonies at the age of 10 and had never since then visited regions where she might have become reinfected. As for the contamination of the donor through the transfusion of blood, there are a number of examples. These contaminations can arise only through an apparatus functioning wrongly at a critical moment.

#### Mental Changes in Persons Receiving Malaria Therapy

Mr Pierre Bourgeois, writing in the *Revue médicale française*, gives an account of the mental disorders observed in patients with dementia paralytica, following the application of malaria therapy, even when they are regarded as cured of the disease. The characteristic phenomena of the disease are often replaced by a special psychosis, which develops gradually but steadily and which takes on ordinarily an hallucinatory form. Gradually there appear hypochondria and ideas of persecution and of ill will on the part of the entourage, which are succeeded, and much more rapidly than in chronic hallucinatory psychoses, by hallucinations, first of a general nature, then becoming more and more restricted, and finally taking the direction of a circumscribed delirium. The hallucinations are nearly always auditory, although sometimes tactile and, exceptionally, visual. This hallucinatory delirium may, in certain cases, disappear in the face of a recrudescence of paralytic symptoms. In other cases the delirium has been seen to evolve in a chronic manner over a period of years, being absolutely fixed in its form. It is this fact that has caused disappointment to many psychiatrists, and the frequency of these states constitutes one of their chief objections to malaria therapy. Aside from hallucinatory delirium the postmalarial psychoses may take on other forms. Of these the wenging form causes a change of character and makes the patient a most aggressive complainant, who often becomes a menace to the psychiatrist who has subjected him to treatment. Likewise, psychoses of a manic-depressive type have been observed, these sometimes manifest themselves by an attack of typical melancholic depression following immediately the malarization. Vermeulen and Vervaeck reported a hypochondriacal type of a depressive nature that followed, in three of their cases, malarization. They see in this new clinical type the psychic reaction of the person who is gradually regaining his power of autocriticism and is chafing under the difficulties of social readaptation. Professor Claude gave the histories of two dementia paralytica patients who, following malaria therapy, began to develop symptoms of dementia praecox. Schulze and Bertolami discussed the development of a schizophrenic syndrome that followed malarization.

#### BERLIN

(From Our Regular Correspondent)

Dec 5, 1932

#### Precautions in the Use of Arsphenamine Preparations

The council on health has modified the essentials for the use of arsphenamine preparations, as established in 1928. Sulpharsphenamine has been added and silver arsphenamine has been dropped. These important regulations were elaborated by a committee of experts, including Professor Jadassohn of Breslau and Professor Zumbusch of Munich.

The new regulations state that arsphenamine preparations may be employed in all forms of syphilis. The sooner after infection that an adequate arsphenamine treatment is begun the better the prospects are of an early recovery. Success in the use of arsphenamine preparations requires a complete mastery of the technique.

Before arsphenamine treatment is begun, a thorough study must be made of the patient as to possible earlier infections and his present state of health, which should include a careful examination. During even slight acute disturbances (colds, sore throat, disordered stomach), the injections should be

avoided, unless the indications are imperative. In case of acute disturbances of a severe nature, all injections should be omitted, as they should be in persons who reacted poorly to the last injection and are still suffering from its effects. Arsphenamine injections should not be given a patient on either an empty or an overloaded stomach. Great caution is required also in undernourished, cachectic and anemic patients, in patients with status thymolymphaticus, in diabetes, goiter, exophthalmic goiter, Addison's disease, pulmonary tuberculosis, in disorders of the heart and blood vessels, kidneys and the liver, in digestive disorders, obesity, alcoholism and epilepsy, and in pregnancy. In such cases, minimal doses should be tried first and the normal dose not given until it is evident that the minimal dose is well borne. The same precautions should be taken with patients who present involvement of the central nervous system.

The size of the dose must be determined in view of the body weight, general health, and the localization, kind, severity and extent of the existing syphilitic phenomena evident in each case. For the first injections, small doses are recommended. Between injections there should be an interval which, in case of larger doses, should range from three to seven days. The administration of maximal doses should not be continued unless the treatment is constantly well borne. In case of combined treatment with compounds of bismuth or mercury, special precautions in regard to the size of the dose should be taken. Before an early injection of arsphenamine and also of bismuth or mercury preparations, the urine must be examined for albumin.

During the treatment, the patient should avoid all unusual bodily exertions and excesses of every kind. Care must be taken that the patient partakes of a nutritious diet. Patients should be instructed to be on the watch for any disturbances that may arise following an injection, such as headache, nausea, dizziness, vomiting, fever, attacks of fainting, insomnia, flushing of the face, hemorrhages, cutaneous eruptions, loss of body weight or a decrease in the amount of urine. After the first injection, there may occur in recent syphilis an increase of body temperature that lasts but a short time and it is not to be taken as an indication for the discontinuance of the treatment. However, any increase in temperature that occurs later suggests caution. Any appearance of the so called vasomotor syndrome during an injection has a bearing on the continuation of the treatment (smaller doses, possible substitution of a different arsphenamine preparation, subcutaneous injection of 1 mg. of epinephrine ten minutes before the injection of arsphenamine).

Both physician and patient should be on the watch for the appearance of exanthems even though slight. Exanthems make an interruption of the treatment at least for two weeks imperative since too early further administration of arsphenamine (or of bismuth and, particularly, of mercury compounds) may cause an exceedingly severe general cutaneous inflammation. Mild exanthems may frequently be checked by intravenous injections of from 0.6 to 1.0 Gm. of sodium thiosulphate. Before recurring treatment it is best to call a specialist in consultation. With the combined treatment with arsphenamine and bismuth or mercury special attention must be given to the secondary effects of the preparations used.

The administration of all arsphenamine preparations requires the strictest attention to asepsis. In every instance the control number of the preparation used and the pharmacy from which it was secured should be recorded. The solutions must always be made with great care immediately before they are injected. The plan of dissolving the preparations in the syringe is to be condemned. For the preparation of the solutions, not tap water but sterile distilled water that has been slightly warmed (but not heated above body temperature) should be employed. It is best to redistill the water before dissolving the preparation

even though vessels composed of quartz or Jena glass are employed, or one may use sterile distilled water put up in ampules, or the double ampule and syringes consisting entirely of glass. Only perfectly clear solutions, free of visible particles, may be injected.

Since arsphenamine preparations, particularly neoarsphenamine and sodium arsphenamine, readily decompose in the presence of air and become more toxic, each ampule before use must be inspected to see that it is intact and not toxic. The contents of spoiled ampules must not be used, nor remnants of previously opened ampules, nor preparations that have not the usual color. The freshly prepared solutions are to be used at once. It is inadmissible to procure ready-made solutions from a pharmacy, to prepare a sufficient quantity of solution for several patients to be treated in succession, or to allow the solutions to stand more than a few minutes.

In giving intravenous injections, care must be taken that the point of the syringe does not become wet outside with the arsphenamine solution. The needle must lie well within the vein, so that injury of the inner wall of the vein or perforation cannot occur. The injection must be made slowly (in the case of persons with heart defects, the injection must occupy several minutes). On the slightest evidence of pain, or the formation of an infiltrate or of wheals, or on manifestation of dyspnea, congestion or the like, the injection should be immediately halted. If, during the injection, a hindrance is noticed, the injection should not be resumed until, through drawing blood into the syringe, one is assured of the correct position of the needle in the vein. Arsphenamine should be given only by a physician who has thoroughly mastered the technic and who observes conscientiously all precautionary measures.

## BELGIUM

(From Our Regular Correspondent)

Nov. 21, 1932

### Biologic Diagnosis of Pregnancy

Mlle Brouha has shown that a single intravenous injection of 5 cc. of the urine of a pregnant woman into a female rabbit is sufficient to transform the appearance of the ovary of the rabbit, which hypertrophies, becomes congested, and shows follicular maturation and hemorrhagic follicles, which become transformed into corpora lutea. These changes may be seen with the naked eye. The hemorrhagic follicles appear as large bright red spots that become more and more prominent until they reach sometimes the size of a small pea, the color of which changes to a dark red, then to a violet hue, and finally to a bluish black. As a rule, there are several hemorrhagic follicles on the ovary and it may happen that the whole organ assumes various shades of color. The female rabbit always reacts to the injection of gravidic urine by the formation of hemorrhagic follicles. Several females into which the same urine was injected presented each time the identical qualitative results. The reaction begins within twelve to fifteen hours. The response is usually frank after twenty-four or sometimes thirty-six hours. One of the ovaries frequently reacts sooner than the other. This method has some important advantages: 1 It is easy to procure female rabbits. 2 The female rabbit, which shows considerable resistance to injections and to operations, always reacts to the injection of the urine by the formation of hemorrhagic follicles. It is thus unnecessary to use more than one animal. 3 Whereas some hormonal tests require one or more daily injections repeated for several days, the test with the female rabbit necessitates only a single intravenous injection. 4 The reaction is macroscopic and easy to interpret.

### The Prevention of Leprosy on the Congo

At the annual medical convention held in Brussels (Journées médicales), Dr. Dubois showed how complex is the problem of the prevention of leprosy in the Congo. Prophylaxis against

leprosy must be developed in the Congo on the basis of partial isolation, combined with treatment. The campaign has to be carried on as follows: in a carefully chosen place a laboratory and a central hospital are established, which are occupied by the chief physician of the leprosy service, who devotes all his time to this work. The laboratory has a double duty. It carries on scientific research and it takes charge of prophylaxis in the surrounding region. Prophylaxis is carried on in centrally located villages in which dispensaries are established. A sanitary agent has charge of three or four villages, in which he supervises the treatment. The physician inspects these villages from time to time and supervises the diagnoses and checks up on results secured. The physician and four or five sanitary agents can thus cover a large area.

### Centers of Preventive Medicine

At the inauguration of the fourth center of preventive medicine, located at Anderlecht, near Brussels, Dr Immanitoff pointed out the results secured by the *Société belge de médecine préventive et d'eugénique*. Although created only three years ago with seven charter members, it has today 873 organizations, which include nearly 1,250,000 members. In the three centers now functioning, it has been found that the examination of persons who considered themselves free from disease often revealed the existence of conditions the timely treatment of which prevented serious later developments. Dr Immanitoff emphasized that no treatment is given at the centers of preventive medicine and that these merely refer the patient to the attending physician, to the specialist or to the dispensary.

### A New Health Center

The Red Cross Society of Belgium has established a health center at Watermael-Boitsfort, which admits adults and children and combines all the types of dispensaries and consultation centers. The center comprises the services of the medical inspection of schools, dental, otorhinolaryngologic and ophthalmologic dispensaries, with a gymnasium and a room for massage, consultation rooms for medicine, surgery and infantile medicine, an antituberculosis dispensary, a maternity, a library and shower baths.

### Roentgen Therapy in Prostatic Adenoma

Addressing the *Société belge d'urologie*, Dr Gaudy discussed the contraindications to roentgen therapy in the treatment of prostatic adenoma. The action of roentgen therapy is unquestionable, but it appears to exert its influence more particularly on the congestion and the states resulting therefrom. It is only in the primary stage of prostatic hypertrophy that one obtains favorable results with this treatment.

In the secondary and tertiary stages, roentgen therapy, used for glandular hypertrophy, termed "soft prostate," may bring about temporary improvement without exerting definitive action on the progress of the disease. Roentgen therapy is therefore of some aid in cases in which surgical intervention is refused or contraindicated. If properly done, treatment by roentgen rays presents no dangers and in that respect (but in no other) it is superior to surgical treatment. However, even in the opinion of radiologists who are frank, the most enduring results are secured by the surgical method.

### Sterilization of Abnormal Persons

Following the presentation of the papers of Ley and Verbaeck before the *Société de médecine mentale* of Belgium, a session was devoted to the discussion of the sterilization of abnormal persons. In general, the arguments of a purely scientific nature that have been presented in opposition to the sterilization of abnormal persons have not been refuted. The impossibility of foreseeing with certainty the transmission of defects to posterity, the uncertainty of the laws of heredity and especially of their application to man, even the uncertainties as to the question whether or not the good effects of

hygienic and moral reeducation can be transmitted to posterity. A mutilation as serious as sterilization cannot be recommended on a basis that rests only on theories. If sterilization is to be restricted to the grave cases, its aid will be negligible in the crusade against degeneracy. This question cannot be separated from that concerning birth control and if such measures were approved, abuses would be inevitable. The number of unions effected solely for gratification would increase and that would be for the human race a peril as grave as that of degeneracy.

From the practical point of view, it would seem that one should reserve sterilization for imbeciles and criminals by constitution and recommend birth control measures for other defective persons.

Measures will be taken also that will tend to increase the birth rate among healthy persons. Large families will be encouraged and aided in various ways, but the health of the progenitors is indispensable. In any complete program, constructive eugenics and all other methods for the improvement of the race must be brought into action.

### CAPE TOWN

(From Our Regular Correspondent)

Nov 30, 1932

### The Annual Medical Congress

The twenty-seventh Annual Medical Congress will take place at Cape Town next September under the presidency of Dr E. B. Fuller, one of the senior surgical specialists in that city. Dr Fuller is the son of an old minister of the crown and agent general for the Cape Colony in London. He studied at Edinburgh and qualified in 1891. For the past fifteen years he has specialized in genito-urinary diseases.

The congress will probably meet in the new university buildings at Groot Schuur, which are now nearing completion. They have been fourteen years in building and are ranked as among the first of South Africa's architectural marvels, occupying as they do a mountain site that gives them the magnificent background of the imposing Table Mountain. The Cape Town congress is always popular, for the legislative capital of the union is situated in a peninsula that presents many attractions to the visitor.

### A Regional Health Conference

A regional health conference, under the auspices of the League of Nations Health Department, held last week at Cape Town, was attended by delegates from England, Singapore, America and all the African states, who were the guests of the government. The subjects discussed ranged from smallpox and yellow fever and the danger of carrier infection by aerial transport to the problems of the organization of health services in native areas. Sir George Buchanan, of the League of Nations Health Department, presided. Unfortunately, little advantage was taken of the opportunities for publicity, and public interest waned considerably after the first day. It is a pity that those responsible for such conferences do not realize the possibilities that they hold for the education of the public. A lecture on some of the subjects discussed—for example, the necessity for adequate protection against smallpox or diphtheria—would have drawn a good audience and been of great value in awakening a public health conscience, which at present is not much in evidence.

### Deaths Under Anesthetics

Sir Edward Thornton, minister of health, draws attention in his recently published annual report to the increased incidence of deaths under anesthetics. The death rate is 1.9 per thousand for all anesthetics and the death rate for ether anesthesia is the highest given in the list of anesthetics. While the figures cannot be relied on to prove the actual mortality rates from

anesthetics, they are alarming enough, and various explanations have been suggested. One is that the high mortality from ether is due to the fact that a locally made ether is used, but there is probably little in this suggestion, as chemically there is no difference between the locally made product and imported ether. A much more probable explanation is that the "anesthetic deaths" are largely "operation deaths" and that ether is selected for the majority of moribund patients as the safest anesthetic. Admittedly our medical students do not get sufficient time to become proficient in administering anesthetics, and something might be done, in the case of large hospitals, in the way of employing a resident anesthetist, for the majority of deaths under anesthetics appear to be in cases in which emergency operations are necessary. There are, however, many factors that have to be considered before the high mortality rate can be accepted as wholly due to the risks of the anesthetic.

### Death of Jane Waterston

The death of Dr. Jane Waterston, who is practically the doyenne of the profession in this country, removes one of the most picturesque personalities among us. She was one of the first three pupils who signed the roll for the newly established London School of Medicine for Women, at a time when the entry of women into the profession was resented by most practitioners and by practically all the leading teachers of medicine. When she qualified she had to take the Irish diploma as it was impossible to obtain an English diploma. She had already been a trained nurse and midwife, serving under the late Dr. Herman at the Old Somerset Hospital in the early seventies of the last century, and before that she had been a mission worker among the Bantu at Lovedale. Her exact age is still a matter of conjecture, but her own statement had always been that she was born at Inverness eighty-eight years ago, the daughter of a bank manager. In 1883 she established herself in private practice at Cape Town and rapidly gained a large clientele and a great reputation as a philanthropic and public spirited medical woman. She served on many public bodies, was an able speaker, a keen politician and a lifelong friend of the late Lord Milner and of Cecil Rhodes. For the past three years she had lived quietly, confining herself to teaching midwifery at the Free Dispensary at Cape Town, but she was still vigorous and always refused to be considered an invalid. Her last illness was a matter of a few weeks, and her death did not come as a surprise. We have lost in her one of our most respected colleagues whose special place it will be impossible to fill.

### Marriages

WALTER CHARLES J. BRINKMAN, Vebien S. D. to Miss Gwendita Weldon of Chicago, Nov. 24, 1932.

WILLIAM EDGAR VAN ORDER to Miss Henrietta Caulkins, both of Chattanooga, Tenn., Nov. 30, 1932.

HUBERT PATRICK CLEMMER, New Orleans, to Miss Pauline Merritt of Ripley, Miss., in October, 1932.

FRANCIS H. PATERNOSTRO, Williamsport, Pa., to Miss Alice Sullivan of Philadelphia, Nov. 16, 1932.

NATHAN SCHAFER to Miss Estelle R. Muscott, both of East Orange, N. J., Dec. 17, 1932.

JOSEPH A. RUSSELL, Milwaukee, to Miss Catherine Nagle of Oconto, Wis., Oct. 29, 1932.

DAVIS LAWRENCE BOIT, Easley, S. C., to Miss Anne Swann of Ocala, Fla., Nov. 24, 1932.

ROBERT L. HOWARD, Cincinnati, to Miss Ruth Long of Hamilton, Nov. 24, 1932.

CARL P. WELCH to Miss Cornelia Leuter, both of Cambridge, Mass., Dec. 1932.

WILFRED P. HANCOCK, Toledo, Ohio, to Miss Dorothy Her-

### Deaths

Edward Nathaniel Brush of Baltimore, University of Buffalo (N. Y.) School of Medicine, 1874, emeritus professor of psychiatry, University of Maryland School of Medicine and College of Physicians and Surgeons, member and past president of the American Psychiatric Association, past president of the Mental Hygiene Society of Maryland, member of the National Committee for Mental Hygiene, honorary member of the Medico-Psychological Association of Great Britain and Ireland and the Societe de Medecine Mentale, Belgium, foreign associate member of the Societe Medico-Psychologique, Paris, physician in chief and medical superintendent of the Sheppard and Enoch Pratt Hospital, 1891-1920, editor of the *Buffalo Medical Journal*, 1874-1879, associate editor of the *American Journal of Insanity*, now known as the *American Journal of Psychiatry*, 1878-1884, 1897-1904 and editor, 1904-1931, aged 80, died January 10, of pneumonia.

William Arthur La Field of Bridgeport, Conn., New York Homeopathic Medical College and Hospital, 1905, clinical professor of radiology, Yale University School of Medicine, New Haven, president of the Connecticut State Medical Society, member of the American Roentgen Ray Society, New England Roentgen Ray Society, Radiological Society of North America, American College of Radiology and the American Radium Society, roentgenologist, 1913-1926, and director of roentgenology and radium therapy since 1926, Bridgeport Hospital consulting roentgenologist to the Stamford Hospital since 1928, radiologist in chief to the New Haven Hospital and New Haven Dispensary, aged 51, died Dec. 26, 1932, of illuminating gas poisoning, presumably self-administered.

Percy Walthall Toombs of Memphis, Tenn., Tulane University of Louisiana School of Medicine, New Orleans, 1905, professor of obstetrics, University of Tennessee College of Medicine, member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, fellow of the American College of Surgeons, president of the Memphis and Shelby County Medical Society, formerly health officer of Greenville, Miss., aged 52, consulting obstetrician to St. Joseph's Hospital, obstetrician in chief, maternity division, Memphis General Hospital and the Baptist Memorial Hospital, where he died, January 3, of heart disease.

George Fetterolf of Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1891, professor of otolaryngology at his alma mater, president of the American Laryngological Association, member of the American Laryngological, Rhinological and Otolological Society and the American Association of Anatomists, served during the World War, consulting laryngologist to the Phipps Institute, the University Hospital and the Methodist Hospital, Philadelphia, and the Eagleville (Pa.) Sanatorium, on the editorial board of the *Archives of Otolaryngology*, aged 63, died, Dec. 29, 1932, of cerebral thrombosis.

George Milton Kline of Boston, University of Michigan Medical School, Ann Arbor, 1901, since 1916 commissioner of the Massachusetts Department of Mental Diseases, member and past president of the American Psychiatric Association, member of the New England Society of Psychiatry and the American Psychopathological Association, member of the committee on organization of the first International Congress on Mental Hygiene, superintendent of the Danvers (Mass.) State Hospital, 1912-1916, aged 54, died, January 5, of heart disease.

Claude Edwin Armstrong, Oconto, Wis., Chicago Medical College, 1883, member of the State Medical Society of Wisconsin for many years, city health officer, member of the board of education on the staff of the Oconto County and City Hospital, aged 71, died suddenly, Dec. 20, 1932, of heart disease following pneumonia.

John Charles Malster of Stromsburg, Neb., Jefferson Medical College of Philadelphia, 1896, also a pharmacist for six years, councilor of the Sixth District Medical Society, formerly member of the state legislature and mayor of Stromsburg, aged 72, died Nov. 7, 1932, of angina pectoris.

William Bryan Gaston, Clarkburg, W. Va., University of Maryland and College of Physicians and Surgeons, Baltimore, 1925, member of the West Virginia State Medical Association, served during the World War, aged 34, died Dec. 12, 1932, in St. Mary's Hospital of pneumonia.

Zalmon Omar Sherwood of Geneva, Ohio, Medical Department of Western Reserve University, Cleveland, 1911, past president of the Ashtabula County Medical Society, served



during the World War, aged 46, died, Dec 13, 1932, of pneumonia

**Francis Xavier Voisard**, Sacramento Calif, School of Medicine and Surgery of Montreal, Que, Canada 1891, member of the California Medical Association, aged 62 died, Nov 5, 1932, in the Sutter Hospital of intestinal obstruction and peritonitis

**Ulysses G Whiting** ☉ Martinsville, Ind, University of Louisville (Ky) School of Medicine, 1897, medical director and manager of the Whiting Mineral Springs Sanitarium, aged 63, died, Dec 13, 1932, of arteriosclerosis and diabetes mellitus

**Edward Charles Barton**, Brooklyn, Long Island College Hospital, Brooklyn, 1921, member of the Medical Society of the State of New York, aged 34, was found dead, Dec 22, 1932, of an incised wound of the throat, presumably self-inflicted

**Charles John Besta** ☉ Chicago, University of Illinois College of Medicine, Chicago, 1926, on the staff of the House of Correction and Police Emergency Hospital, aged 36, died, Dec 24, 1932, of cerebral hemorrhage and arteriosclerosis

**Samuel Clark**, Cochrane, Ala, Medical College of Alabama, Mobile, 1878, Missouri Medical College, St Louis, 1880, member of the Medical Association of the State of Alabama, aged 74, died, Dec 15, 1932, of heart disease

**Daniel Lafayette Carmichael, Jr**, Los Angeles, Jefferson Medical College of Philadelphia, 1911, owner of the Sunland (Calif) Sanatorium, aged 49, died, Dec 13, 1932, in the Pasadena (Calif) Hospital, of pneumonia

**Charles Lee Jenkins**, Caledonia Farm, N C, University of the City of New York Medical Department, 1890 member of the Medical Society of the State of North Carolina, aged 67, died, Nov 4, 1932, of angina pectoris

**Mary E Gregg**, Chicago, Hahnemann Medical College and Hospital, Chicago, 1891, for many years a medical missionary, aged 74, died, Dec 25, 1932, in the Presbyterian Hospital, of injuries received in a fall

**Walter Merritt Seward** ☉ Triplet, Va, University of Virginia Department of Medicine, Charlottesville, 1886, aged 70, died, Dec 20, 1932, in the University of Virginia Hospital, University, of carcinoma of the liver

**Henry Smith Bartholomew**, Napanoch, N Y, New York University Medical College, 1897 served during the World War, aged 63, died, Dec 20, 1932, in the Roosevelt Hospital, New York, of myelogenous leukemia

**Llewellyn T Seavey**, Port Townsend Wash, University of California Medical Department, San Francisco, 1878, for many years quarantine officer in the U S Public Health Service, aged 75, died, Oct 25, 1932

**Melrose Edmund Weed** ☉ Point Pleasant, Pa, Jefferson Medical College of Philadelphia, 1929, assistant demonstrator of clinical surgery at his alma mater, aged 28, was killed, Dec 9, 1932, in an automobile accident

**Raymond Fisher Hain**, Shillington, Pa, Johns Hopkins University School of Medicine, Baltimore, 1914 member of the American Urological Association, aged 43, died, Nov 18, 1932, of carcinoma of the rectum

**William Edgar Bright** ☉ North Hampton, Ohio, Ohio Medical University, Columbus, 1897, aged 66, on the staff of the Springfield (Ohio) City Hospital, where he died, Dec 13, 1932, of coronary thrombosis

**George Claiborne Antony** ☉ Alexandria, La, University of Tennessee College of Medicine, Memphis, 1918, served during the World War, aged 41, died, Dec 11, 1932, in a hospital at Oklahoma City

**John Lyman Potter**, Portland, Maine, University of Vermont College of Medicine, Burlington, 1904, member of the Maine Medical Association, aged 54 died Dec 1, 1932, in the State Street Hospital

**James Wimberly Patterson**, Dawson, Ga, Vanderbilt University School of Medicine Nashville, Tenn, 1884 member of the Medical Association of Georgia, aged 69, died, Dec 7, 1932, of diabetes mellitus

**James Hughes Letcher**, Henderson, Ky, University of Louisville School of Medicine 1873, member of the Kentucky State Medical Association, aged 86, died, Dec 6, 1932, of an injury received in a fall

**Charles Borromes Fitzpatrick**, Maywood Calif, College of Physicians and Surgeons, Medical Department of Columbia College, 1890, aged 63, died, Nov 23, 1932, in Los Angeles, of mitral stenosis

**Mathews William Flournoy**, Los Angeles, St Louis Medical College, 1877, Jefferson Medical College, Philadelphia, 1890, aged 79, died, Nov 27, 1932, of gastric hemorrhage and chronic nephritis

**William Christie**, Chicago, McGill University Faculty of Medicine, Montreal, Que, Canada, 1887, aged 70, on the staff of the Woodlawn Hospital, where he died, January 3, of cerebral hemorrhage

**Fred Wellington Morse**, Oakland, Calif, Medical Department of the University of California, San Francisco, 1891, aged 77 died, Nov 24, 1932, of coronary thrombosis and arteriosclerosis

**Thomas Conard Unthank**, Kansas City, Mo, Howard University College of Medicine, Washington, D C, 1898, aged 66, died, Nov 28, 1932, of bronchopneumonia and coronary sclerosis

**William Sidle Mallory**, Manila, P I, State University of Iowa College of Medicine, Iowa City, 1928, aged 27, died, Dec 27 1932, in a local hospital, of bullet wounds, presumably self inflicted

**Walter B Sabey**, Ravena, N Y, Albany Medical College, 1893, member of the Medical Society of the State of New York health officer of Ravena for many years, aged 70, died, Dec 9, 1932

**Sibyl Harriot Smeby**, Minneapolis, University of Minnesota Medical School, Minneapolis, 1932, aged 27, intern Minneapolis General Hospital, where she died, Oct 2, 1932, of septicemia

**Adajah Behrend**, Washington, D C, Georgetown University School of Medicine, Washington 1866 Civil War veteran, aged 91, died, Dec 27, 1932, of bronchopneumonia and influenza

**James Harvey Banks** ☉ Visalia, Calif, Keokuk (Iowa) Medical College, 1892, College of Physicians and Surgeons of Chicago, 1897, aged 72, died, Nov 11, 1932, of myocarditis and nephritis

**Emmett Alexander Winter**, St Albans, W Va, University of Louisville (Ky) School of Medicine, 1909, aged 72, died, Dec 8, 1932, of injuries received in an automobile accident

**William Harry Smedley**, Capron, Okla, St Joseph (Mo) Medical College, 1888, member of the Oklahoma State Medical Association, aged 69, died suddenly, Dec 16, 1932, of angina pectoris

**Thomas John Sullivan**, Chicago, University of Michigan Medical School, Ann Arbor, 1880 fellow of the American College of Surgeons, aged 75, died, Dec 17, 1932, of pneumonia

**Ellen Hammond Gladwin**, Hartford, Conn, Woman's Medical College of the New York Infirmary for Women and Children, 1872, aged 87, died, Dec 12, 1932, of myocarditis

**Theodore Bachly Pearson** ☉ Nicholasville, Ky, University of Louisville School of Medicine, 1903, veteran of the Spanish-American War, aged 53, died, Dec 12, 1932, of heart disease

**Thomas Edwin Craig**, Louisville, Ky, University of Louisville School of Medicine, 1910, served during the World War, aged 44, died suddenly, Dec 26, 1932, of heart disease

**Christian A Hegge**, Austin, Minn, College of Physicians and Surgeons of Chicago, 1893, on the staff of St Olaf Hospital, aged 67, died, Dec 14, 1932, of coronary thrombosis

**Ella Kyes Dearborn**, Portland, Ore, University of Michigan Homeopathic Medical School, Ann Arbor, 1888, aged 73, died, Nov 27, 1932, in Los Angeles, of lobar pneumonia

**Charles E Moore**, Alden, Pa, College of Physicians and Surgeons, Baltimore, 1883, member of the Medical Society of the State of Pennsylvania, aged 71, died, Dec 1, 1932

**Joseph Hallett**, Bloomington, Ill, Hahnemann Medical College and Hospital, Chicago, 1878, Civil War veteran, aged 89, died, Nov 13, 1932, of cerebral hemorrhage

**Leo Alonzo Berrey**, Corpus Christi, Texas, University of Oklahoma School of Medicine, Oklahoma City, 1916, aged 49, died, Dec 14, 1932, of cerebral hemorrhage

**Benjamin Rush Kohler** ☉ Reedsville, Pa, Western Reserve University Medical Department, Cleveland, 1885, age 67, died, Dec 2, 1932, of myocarditis

**Robert E L Burford** ☉ Brunswick, Ga, University of Louisville (Ky) School of Medicine, 1889, aged 71, died, Dec 1, 1932, of myocarditis and influenza

**Arthur Wilbur Dawson**, Owensboro, Ky, Louisville Medical College, 1907, aged 57, died, Nov 18, 1932, of pulmonary edema and auricular fibrillation

Russell William Reed, Almena, Kan., Washington University School of Medicine, St. Louis, 1928, aged 35, died, Oct. 8, 1932, of pulmonary tuberculosis

Allen Fort Caldwell, Atlanta, Ga., Atlanta Medical College 1915, member of the Medical Association of Georgia, aged 41, was found dead, Nov. 10, 1932

Gaudiose Lemaitre Duhamel, Fall River, Mass., Baltimore Medical College 1896, aged 71, died, Oct. 15, 1932, of myocarditis and chronic nephritis

John Lindsay Davis, Los Angeles, Miami Medical College, Cincinnati, 1881, aged 76, died, Dec. 11, 1932, of bronchopneumonia and diabetes mellitus

Sommers T. Pettingill, Seal Beach, Calif., State University of Iowa College of Medicine, Iowa City, 1879, aged 76, died, Nov. 15, 1932, of influenza

Frank H. Kucera, Verdigré, Neb., John A. Creighton Medical College, Omaha, 1904, aged 53, died suddenly, Oct. 25, 1932, of chronic myocarditis

John C. Branch, White Cloud, Mich., Kentucky School of Medicine, Louisville, 1895, aged 80, died, Dec. 26, 1932, of an injury received in a fall

William Thomas Porter, Jackson, Tenn., Vanderbilt University School of Medicine, Nashville, 1880, aged 82, died, Nov. 28, 1932, of nephritis

Charles D. Herron, South Pasadena, Calif., Hahnemann Medical College of Philadelphia, 1872, aged 97, died, Nov. 7, 1932, of arteriosclerosis

Robert Joseph McAdams, Pittsburgh, Western Pennsylvania Medical College, Pittsburgh, 1897, aged 59, died, Dec. 13, 1932, of pneumonia

William E. Peters, Carlisle, Pa., Hahnemann Medical College of Philadelphia, 1907, aged 48, died suddenly, Dec. 11, 1932, of heart disease

Nelson M. King, Indianapolis, Medical Department of Hamline University, Minneapolis, 1902, aged 65, died, Dec. 16, 1932, of heart disease

William John Sandy, Martinsville, Ind., Medical College of Indiana, Indianapolis, 1900, aged 58, died, Dec. 11, 1932, of metastatic carcinoma

John H. Frank, Milwaukee, Milwaukee Medical College, 1902, aged 62, died, Dec. 14, 1932, of carcinoma of the stomach with metastasis

James Erwin Reed, Bartow, Fla., Syracuse University College of Medicine, 1876, aged 80, died, Nov. 10, 1932, of heart disease

Isaac B. Julian, Salina, Kan., Homeopathic Medical College of Missouri, St. Louis, 1891, aged 74, died recently, of heart disease

Joseph H. Marshall, Southold, N. Y., University of the City of New York Medical Department, 1887, aged 78, died, Nov. 4, 1932

Elmer N. Souder, Souderton, Pa., Jefferson Medical College of Philadelphia, 1895, aged 61, died, Nov. 29, 1932, of myocarditis

Austin A. Lamar, Middletown, Md., Baltimore Medical College, 1898, aged 56, died, Dec. 11, 1932, of uremia and nephritis

David Small Shellabarger, Edmonds, Wash., College of Physicians and Surgeons of Chicago, 1886, aged 73, died, Oct. 12, 1932

John Leon Houseworth, Los Angeles, College of Physicians and Surgeons, Keokuk, Iowa, 1897, aged 61, died, Nov. 25, 1932

Charles Callery Croushore, Greensburg, Pa., University of Maryland School of Medicine, 1905, aged 53, died, Nov. 17, 1932

Otto J. Wolfgram, Milwaukee, St. Louis University School of Medicine, 1906, aged 57, died, Dec. 16, 1932, of heart disease

William Wallace Barden, Renton, N. Y., Homeopathic Medical College of Philadelphia, 1869, aged 87, died, Nov. 22, 1932

Philo Hull McFarland, Calhoun, University of Michigan Medical School, Ann Arbor, 1887, aged 74, died, Nov. 27, 1932

John Manley Reid, Blackwell, Okla., Kansas City Homeopathic Medical College, 1897, aged 85, died, Sept. 1, 1932

John H. McCartney, Sodus, Mich., Fort Wayne College of Medicine, 1890, aged 69, died, Dec. 9, 1932, of heart disease

## Bureau of Investigation

### DR. STOLL'S DIET-AID

Several inquiries have been received within the past year regarding "Dr. Stoll's Diet-Aid, the Natural Reducing Food." A Wisconsin physician writes

A patient of mine who runs a beauty parlor came in for advice in regard to selling a preparation put on the market under the name of Diet Aid for the purpose of reducing weight. This formula is supposed to have originated with a Dr. Stoll and it seems his scheme is to sell this through beauty parlors and I guess there is considerable profit in it for the beauty parlors. The tin can containing this preparation is labeled "Dr. Stoll's Diet Aid. The address is given as—Diet Aid, Inc., 9 South Kedzie Avenue, Chicago, Illinois. Do you know anything about this preparation? A report on it will be appreciated very much.

A Kentucky physician wrote

"Could you tell me what Dr. Stoll's Diet Aid contains?"

A New York physician inquired

Will you kindly give me all the information available concerning Dr. Stoll's Diet Aid? Has it any therapeutic value or are there any harmful ingredients?

Dr. Stoll's Diet-Aid is advertised under such claims as

"When used as a beverage according to directions, it is absolutely guaranteed to reduce fat."

Diet Aid is the answer of science to the demand for effortless and safe method of reducing excess fat.

Dr. Stoll's discovery will bring a new ray of sunshine into the life of any fat person.

The address of Diet-Aid, Inc., is also the address of Dr. John E. Stoll, who, according to our records, was born in 1900, was graduated by Rush Medical College, Chicago, in 1925, and licensed in Illinois the same year. Dr. Stoll is a member of the Chicago Medical Society and through that has qualified as a Fellow of the American Medical Association. In view of these facts, the Bureau of Investigation wrote to Dr. Stoll and asked him several questions regarding the product Diet-Aid and the company that puts it out. Dr. Stoll answered the inquiries fully and frankly, stating, in effect, (1) that the Diet-Aid company was incorporated in Illinois, March 23, 1932, by Bruce W. Hubbard of Oak Park, Ill., H. C. Hubbard of Rockford, Ill., and John E. Stoll of Chicago, (2) that Diet-Aid is intended to be taken in the form of a beverage by those on a reducing diet, and is a compound of milk chocolate, starch, and a water extract of roasted whole wheat and bran, (3) that Diet-Aid has the following composition:

Carbohydrates	75.5 per cent
Crude fat	3.6 per cent
Crude protein	9.2 per cent
Ash	5.6 per cent
Moisture	6.1 per cent

The Bureau of Investigation again wrote Dr. Stoll pointing out that he had failed to state the amount of Diet-Aid to be used in making the ordinary drink of his preparation, and suggesting that a preparation consisting of over 75 per cent of carbohydrates, nearly 4 per cent crude fat, and over 9 per cent crude protein would hardly, in itself, be looked upon as a reducing agent.

Dr. Stoll replied that in making the ordinary drink of Diet-Aid, one level teaspoonful was used in a cup of water. This weighs about 3 grams, and in view of the composition of Diet-Aid, would give 9 calories of carbohydrate, a trifle over 1 calorie of protein, and a little less than 1 calorie of fat, or almost 11 calories (10.89) in all, in a cup of Diet-Aid. In this connection it is worth remembering that a tablespoonful of whole milk has a fuel value of 14 calories.

According to the directions on the trade package, the person who is using Dr. Stoll's Diet-Aid as a reducing agent is told to substitute "one or more cups" of Diet-Aid in the place of breakfast and lunch. The average sedentary woman's daily fuel requirements range from 1,800 to 2,300 calories. The breakfast for such a woman would call for caloric values ranging between 400 and 600; the average luncheon should range between 600 and 800 calories while dinner should run from 800 to 1,100 calories. According to Dr. Stoll's plan such a woman in the place of the 400 to 600 calories for her breakfast would take one or more cups of Diet-Aid having a fuel value of less than 11 calories to the cup, of which 9 calories would be carbohydrates. The same would be true for the luncheon.

Whatever virtues Diet-Aid may have as a pleasant drink, the idea of using the preparation as a substitute for breakfast and luncheon in cases in which reduction in weight is sought would seem to be without scientific basis. The person who follows the Diet-Aid suggestion must inevitably receive a hopelessly unbalanced diet.

## Correspondence

### AN EYE SPECULUM FOR CATARACT OPERATIONS

*To the Editor*—My attention has been called to a communication in *THE JOURNAL*, Dec 3, 1932, from Dr. Walter B. Lancaster commenting on an eye speculum for cataract extraction which I described and illustrated in *THE JOURNAL* Oct 8, 1932, page 1252.

Dr. Lancaster says that the eye speculum is a good illustration of how far one can go afield if one starts from an erroneous premise.

I started from the premise that a patient with a cataract incision and an unsupported speculum in the eye can expel vitreous by a contraction of the orbicularis muscle. If that premise is erroneous, I have indeed gone far afield.

I agree fully with Dr. Lancaster when he says, "Expulsion of vitreous during cataract operations may come from either or both of two causes: pressure on the eyeball by the surgeon, or pressure on the eyeball by the patient through muscular action." If the surgeon causes expulsion of the vitreous by pressure on the eyeball, that is the surgeon's fault. If the patient causes expulsion of the vitreous by pressure on the eyeball by means of muscular action, that is something for the surgeon to provide against, if possible. That is exactly what I am trying to forestall by means of a speculum that prevents the patient making pressure on the eyeball by means of the orbicularis muscle.

Dr. Lancaster says the idea that the muscles of the lids are the chief or even the sole cause of expulsion of vitreous when the patient squeezes is widespread. He has coupled two statements together here which I think should be separated. When he says that "the pressure of the lids is not the sole cause of the expulsion of the vitreous when the patient squeezes," I agree with him. When he says "it is not the chief cause," I am amazed.

Dr. Lancaster is proving his case by the Duke-Elders, so I will let them answer his statement that the muscles of the lids are not the chief cause of expulsion of vitreous when the patient squeezes. They speak as follows: "The enormous influence of the extra-ocular muscles on the intra-ocular pressure demonstrates the necessity for adequate akinesia in all intra-ocular operations. When it is remembered that a relatively mild contraction of the orbicularis raises the intra-ocular pressure from 27 to 53 mm. (Hg), the danger of loss of vitreous is obvious unless this muscle is thrown out of action."

"It follows that in all such operations the orbicularis should be paralyzed either by injection of the facial nerve as it crosses the ramus of the mandible or by a local injection around the orbit."

It is quite evident from this quotation that the Duke-Elders and I are in complete accord as to the danger of expulsion of the vitreous in even a mild contraction of the orbicularis, and the absolute wisdom of putting that muscle out of action in all cataract operations. They accomplish the result in one way and I in another. There is no objection that I can see to a combination of the methods. It would make assurance doubly sure. The Duke-Elders say that even a mild contraction of the orbicularis raises the intra-ocular pressure from 27 to 53 mm. of mercury and there might still be power enough in the partially paralyzed lids to cause an expulsion of vitreous.

Having disposed of the influence of the orbicularis, I will take up the question of the muscles of the eyeball.

The Duke-Elders used a drug that caused a powerful contraction of all the muscles of the eyeball. The recorded rise of the intra-ocular pressure was 6 mm. of mercury. I think this condition would hardly be duplicated in operative work as I think it hardly likely that all the muscles of the eyeball would contract at the same time. If one set of muscles contracted, their opponents would probably relax, thus to a certain extent counterbalancing the pressure, but granting that the muscles of the globe could raise the pressure 6 mm., I do not think this rise would equal that made by the necessary pressure of the surgeon in extracting the lens. In other words if the orbicularis can be put out of commission, I think one need not worry about the pressure exercised by the muscles of the eyeball.

Dr. Lancaster interpreted a statement of mine in a way that I did not intend. He writes: "Dr. Cullom says he has seen vitreous expelled even when the lids were firmly held by elevators. This should make one skeptical enough to investigate the other possible factors." The idea I meant to convey is that an elevator held by hand is not proof against a sudden, unexpected contraction of the orbicularis. The assistant's mind is necessarily on the field of the operation and an unexpected movement is quite likely to catch him off his guard. It was this very possibility that caused me to devise the speculum.

Dr. Lancaster says that the loss of vitreous in his practice in the last twenty years has been small. I congratulate Dr. Lancaster on his skill, but that does not solve the problem. He might do a thousand cataract operations without the loss of vitreous in a single case, but in every one of the thousand cases there is present the potential danger of loss of vitreous. The loss of one eye is too great if the loss could have been prevented by proper precaution.

I repeat: If the surgeon can go into a cataract operation secure in the feeling that the patient cannot damage the eye by squeezing, it will help his morale and add to the steadiness of his hand.

M. M. CULLOM, M.D., Nashville, Tenn.

### HISTORY OF BLOOD TRANSFUSION

*To the Editor*—The article on "The History of Blood Transfusion" that appeared in the department of Miscellany (*THE JOURNAL*, Nov 12, 1932, p. 1717) interested me considerably. May I point out an error which involves the discovery of the blood groups that appears in this article and also in the review by Zimmerman and Howell in the September issue of the *Annals of Medical History*, from which the article in *THE JOURNAL* is apparently concentrated.

On page 1719 appears the paragraph: "In 1900 Landsteiner (and, independently, Shattock) made the momentous discovery which was recently awarded the Nobel prize, namely, that human blood contains iso-agglutinins, capable of agglutinating other human red blood corpuscles, and that human blood is divided into three groups with regard to the agglutinating reactions. Decastello and Sturli (1902) added a fourth group. Hektoen (1907) was the first to point out the significance of iso-agglutinins in human blood transfusions, and their relations to the reactions and hitherto unexplained fatalities from the injection of human blood."

As a matter of fact, Shattock did not study iso-agglutination but rouleau formation, as may be seen by consulting his original paper (*J. Path. & Bact.* 6:303, 1900). On page 311 of this paper, Shattock says: "The blood serum, however, stands very little dilution. If one drop of salt solution is mixed with one of the serum and to one drop of the mixture is added one drop of normal blood the typical picture no longer presents itself, the hanging drop not being appreciably different from that of normal blood. (This tendency of rouleau formation to disappear on slight dilution was first observed by Shattock. True iso-agglutination can stand considerable dilution without any alteration of the reaction.) Furthermore on page

312, Shattock writes "The hanging drop of an equal admixture of typhoid blood serum and normal human blood showed throughout, when compared with a control made with normal human serum and normal human blood, a rouleau formation of exaggerated length and abnormally coarse mesh." Finally, on page 310, he writes "What is the result if normal blood serum is added (1:1) to normal human blood? In this control no appreciable difference ensues from the picture presented by normal human blood, the rouleaux maintain a moderate length and construct a uniform and comparatively close net." The illustrations that appear in this article show rouleau formation. This question has been dealt with at some length by Hans Zinsser and A. F. Coca (Remarks Concerning Landsteiner's Discovery of Iso-Agglutination and the Blood Groups, *J Immunol* 20:259 [April] 1931; Coca, A. F. Note Concerning Differences Between the Clumping of Pseudo-Agglutination and Iso-Agglutination, *J Immunol* 20:263 [April] 1931).

With reference to the application of blood grouping for blood transfusion, in the last sentence of Landsteiner's paper, "Ueber Agglutinationserscheinungen normalen menschlichen Blutes" (*Wien klin Wchschr*, 1901, p. 1132), he writes "It may be stated further that the observations cited serve to explain the varying results of therapeutic transfusion of human blood" (Endlich sei noch erwähnt, dass die angeführten Beobachtungen die wechselnden Folgen therapeutischer Menschen Bluttransfusionen zu erklären gestatten). Apparently, no attention was paid to this suggestion until Hektoen in 1907 again suggested the possible application of blood grouping for transfusion.

ALEXANDER S. WIENER, M.D., Brooklyn

### PROPHYLAXIS AGAINST WAR

To the Editor—It is encouraging to note, in your report of the International Conference on Medical Economics (*THE JOURNAL*, October 22, p. 1434), that the Dutch Medical Association has a Committee for Prophylaxis Against War. Your correspondent adds "This is a new body which believes that the medical profession has a special mission in regard to the fight against war using the parallel of the Red Cross."

In this connection it might be timely to recall that the first organized effort to enlist physicians in the cause of world comity was made through the Association Medicale Internationale pour Aider à la Suppression de la Guerre, founded in March 1905 by that representative French colleague Dr. Joseph Riviere of Paris. It was his aim, through fellow practitioners, to build up a strong, world-wide sentiment against conflicts between nations and a widespread membership in this praiseworthy movement had been gained through his energetic leadership. Unfortunately, militarism and resultant nationalistic jealousies proved too powerful, so that the World War ended his altruistic efforts at the time.

Readers of *THE JOURNAL* will doubtless remember this genial French doctor, who, in the spring of 1927, visited North American cities from coast to coast and addressed medical meetings in the cause of world friendliness. It was at this time, marking his professional eminence and lifelong struggle for international fellowship that he was made an honorary member of our national medical organization.

A. BELA HIRSH, M.D., New York

### PROPHYLAXIS OF PUERPERAL INFECTION

To the Editor—The mere substitution of the jar for the pan especially in hospitals would save the lives of at least 40 per cent of the 8,000 women who die annually in the United States from puerperal infection. Fowler's position—drain and contraction—was the dictum of Polak.

HENRY GARRELL, M.D., McCool, Neb

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### AMENORRHEA

To the Editor—A woman, aged 30, a virgin, well nourished, with no untoward symptoms of any sort that are disturbing her, had cessation of the menses about a year ago. The patient is a grade school teacher, height 67 inches (170 cm), weight 150 pounds (68 Kg), and has not suffered pains or any sort of inconvenience. Two years ago a normal menstrual period suddenly made its appearance twice a month, with no disturbance, it seemed to be perfectly normal except for the occurrence twice in a month. There has been no increase in weight and no change in metabolism, the vegetative functions are normal, the thyroid is not palpable, the pulse is normal, the blood pressure is normal, and examination of the urine gives negative results. In fact a careful gynecologic examination reveals all the uterine adnexa normal. Apparently there is nothing wrong save the menstrual close, which, of course, causes a woman of that age to be alarmed. On the theory that the case might be one of endocrine origin, she has had some glandular treatment with theelin. Kindly discuss this case with probabilities and with suggestions for treatment. I should like to know what might be expected in a case of this sort, which is an entirely new one to me. I might state that there is in the family history on the mother's side two or three cases of asthma. The patient's personal history is entirely negative, she has never been seriously ill. The first menstruation occurred when she was 14 years of age and was painless. Kindly omit name and address.

M. D., Oklahoma

ANSWER—Amenorrhea per se is not a condition about which there need be any alarm. Since the patient has no other symptoms of the menopause except perhaps slight overweight, and since examination reveals normal organs, she should be assured that she is practically in as good physical condition as are women who menstruate regularly. The patient should be impressed with this fact, because worry about the absence of the menses may be the only source of annoyance. However, should the woman in question marry, her chances for conception are distinctly less than are those of normally menstruating women. It would be worth while to perform Frank's test for the female sex hormone to see whether the patient has a periodic sex cycle.

Regardless of how much theelin is given, there will not be a return of a rhythmic menstrual cycle as a result of this. In fact, no single ovarian preparation thus far available has been found to be capable of making a woman menstruate. This is due to the physiology of menstruation. The ovary apparently produces more than one internal secretion necessary for the completion of the menstrual cycle. One arises in the follicle and is known as folliculin or theelin and brings about the stage of proliferation of the uterine endometrium. A second internal secretion, known as progesterin, arises in the corpus luteum and acts only after ovulation, which generally takes place at about the middle of the intermenstrual period. This secretion causes the endometrium to progress from the proliferative stage to the secretory or gravid stage, which reaches its greatest development just before menstruation occurs. The first hormone alone, theelin or folliculin, is not capable of bringing about all the changes in the endometrium necessary for a complete monthly cycle. Even if bleeding should follow its administration, this is not true menstruation but a condition similar to the estrous bleeding seen in some of the lower animals. Furthermore, theelin has no effect on the ovaries. Its action is purely substitutional. Likewise, progesterin, which as yet is not available commercially, has no action on the ovaries and is therefore also substitutional. Furthermore, progesterin cannot act on the endometrium unless the latter has been prepared by theelin.

While it is true that menstrual bleeding is the result of the action of both theelin and progesterin, these hormones in turn are under the control of the anterior lobe of the pituitary. This gland secretes two sex hormones. One of these is known as prolactin A and is responsible for the maturation of ovarian follicles and the activation of theelin. The other hormone is known as prolactin B and controls luteinization and the production of progesterin.

The logical means, therefore, of attempting to bring about a return of menstruation is to give a patient large doses of theelin hypodermically for about two weeks and then follow this with injections of progesterin. Since progesterin is not being sold commercially as yet it is necessary to substitute for it anterior pituitary luteinizing substances. By means of repeated use of these preparations some amenorrheic women, but by no means all, can be made to menstruate. However, since this therapy

is nearly always purely substitutional, the hypodermic medication will have to be repeated month after month, and such treatment does not seem worth while.

Some physicians have secured a return of the menses by administering "stimulating" doses of x-rays. This treatment should be given only by a competent roentgenologist and only if the patient shows a cycle by means of the female sex hormone test. Frank says that "permanent and irremediable amenorrhea has been induced by injudicious raying in patients whose ovarian function was at the time completely in abeyance." It must not be forgotten that in some cases there is a spontaneous return of the menstrual flow.

#### TREATMENT OF EARLY LOCOMOTOR ATAXIA IN WOMAN

*To the Editor*—Will you kindly outline a course of treatment for early tabes in a woman, aged 33 and weighing 200 pounds (90 Kg.) who had a primary chancre thirteen years ago, with only seven or eight injections at that time—probably some arsphenamine. At present she shows lightning pains of both knees and two attacks of vomiting, one lasting four days and the other two days. She has Argyll Robertson pupils, diminished ankle and knee jerks, and diminished deep pain sense. There is no ataxia, incoordination or Romberg sign. The blood Wassermann reaction is 4 plus, Kahn negative. The spinal fluid Wassermann reaction is 2 plus, Kahn negative. A colloidal gold test was not made. Her physical condition is otherwise excellent, with no evidence of cardiovascular syphilis on examination. At present I am giving her neoarsphenamine, 0.6 Gm intravenously, and bismuth in oil intramuscularly weekly, to both of which she has reacted very well. Would you advise following this with tryparsamide? If so, in what dosage and frequency? Or would you advise some other course of treatment? Please omit name.

M D, New Jersey

**ANSWER**—Even men with large experience differ as to the best way of treating tabes. There are some who would use some form of fever therapy even in a rather mild case. In this instance it would seem best first of all to have the eye-grounds and visual fields tested, if there is no evidence of optic nerve disease, tryparsamide would be the best remedy. It is generally given intravenously once a week in series of eight injections, and an injection of mercuric salicylate may be given intramuscularly once a week. It is best to give only 2 Gm of tryparsamide for the first two injections. If no untoward eye symptoms are produced, 3 Gm may be given the rest of the time. It is customary to rest one month after the series of eight injections and then repeat the course over and over again.

#### NEOCAINE

*To the Editor*—What is Neocaine the French preparation? In some places I have read that it is procaine hydrobromide, in other places, hydrochloride. Is it Council accepted?

E O B, Illinois

**ANSWER**—One original package of Rachi-Neocaine Corbiere (Laboratoires Pharmaceutiques Corbiere, G. Auger, Pharmacien, 27 Rue Desrenaudes, Paris, Sole U. S. Agents, the Anglo-French Drug Company (U. S. A.), Inc., 1270 Broadway, New York) was submitted to the A. M. A. Chemical Laboratory for preliminary examination. The package contained twelve sealed ampules, each containing 0.2 Gm of a clear, colorless, crystalline substance. Qualitative tests indicated the presence of procaine base (para-aminobenzoyl-diethylaminoethanol) and chloride. On thermal analysis the specimen was found to be identical with procaine hydrochloride. U. S. P., 11c, para-aminobenzoyl-diethylaminoethanol hydrochloride. Neocaine appears therefore to be the French proprietary name for procaine hydrochloride. The product has not been submitted to the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies. It does not therefore have the status of an accepted drug.

#### USE OF CALCIUM CHLORIDE TO PREVENT OOOZING OF BLOOD AFTER TONSILLECTOMY

*To the Editor*—Is the intravenous injection of calcium chloride of value in checking hemorrhage following tonsillectomy? I refer to giving it postoperatively. Please omit name.

M D, Iowa

**ANSWER**—The intravenous injection of calcium chloride shortens the clotting time of the blood, so that it is of some value in lessening postoperative oozing. When, however, a good sized vessel is bleeding the mere use of the calcium chloride is not sufficient. Finding the bleeding point and ligating it securely is perhaps the best method of controlling the hemorrhage. Some operators prefer application of pressure by means of gauze plugs either with or without the addition of some styptic.

#### DELAYED ORGASM

*To the Editor*—A patient complains of having pathologically delayed orgasm during intercourse and sometimes he fails entirely when he is not at all depleted. It has been suggested to him that a circumcision would greatly facilitate and hasten orgasm. He has no phimosis and the prepuce is easily retracted, although it is rather long. His libido is normal or supernormal and he complains that he rarely gets complete relief from intercourse even though he is successful in having a climax. What are the effects of circumcision on this, and if not beneficial, what would you suggest? Please omit name.

M D Texas

**ANSWER**—Circumcision has no effect on this condition. The condition is due to a lack of sensitiveness, sometimes amounting to almost complete anesthesia, in the prostatic urethra. The opposite condition, namely, a hypersensitive prostatic urethra is often the cause of rapid or premature orgasm. It has been proved experimentally that injection of a mild solution of cocaine into the prostatic urethra just before coitus will be followed by a lack of orgasm, although the rest of the coitus will occur normally. The treatment consists in increasing the sensitiveness of the prostatic urethra. This is best done by bringing heat to that part either through hot water through a psychrophore or through an electrically heated prostatic bougie.

#### LIPIDOSIS CORNEAE

*To the Editor*—I have a case of lipoidosis corneae and am desirous of getting any and all information found in the literature.

B G HOLCOMB M D, Battle Creek, Mich.

**ANSWER**—In view of the rarity of lipoidosis corneae, there has been but little in the literature. Lipoidal infiltration of the periphery of the cornea in the form of an arcus senilis is extremely common and under certain circumstances this may extend to involve a greater extent of the cornea than is commonly embraced in the term arcus senilis or arcus lipoides. A digest of the literature to date may be found in the fourth volume of the *Kurzes Handbuch der Ophthalmologie*, Schieck and Bruckner, 1931, page 377.

#### BOWING OF LEGS IN RICKETS

*To the Editor*—In cases of cured rickets but with residual bowing of the legs what is the usual prognosis in regard to the bowing? Should braces be necessary or useful?

J B STOLL, M D Fontanelle, Iowa

**ANSWER**—In cases of cured rickets with residual bowing of the legs, the usual prognosis is good in regard to the bowing unless there is extreme deformity.

Braces are not necessary, in fact, they are not useful. The condition corrects itself in spite of the wearing of braces. However, the correction could be theoretically hastened if the braces were constantly altered to maintain pressure, but the patient will not wear braces with sufficient pressure to do any good.

Most of the residual deformity is false rather than real, in that there is usually relaxation of the knee joint, which disappears with conservative observation.

#### COPPER AND IRON MIXTURE FOR CHILDREN

*To the Editor*—Please suggest a suitable combination of iron and copper in solution for use in the treatment of infants and children, noting the dosage of iron salt and of copper recommended for the body weight of the patient. Would either of the following be correct for a baby at 1 year to 2 years of age, with due regard for palatability and pharmaceutical compatibility?

R	Cupri sulphatis	gr ½	R	Cupri sulphatis	gr ½
	Ferri et ammonii citratis	gr x		Syr ferri saccharati soluti	
	Syrupi aurantii	ml xv		bilis (N. F.)	5 cc
	Aquae q s	ad 5 i		Aquae q s	ad 5 i
M	Ft sol		M	Ft sol	
Sig	One teaspoonful t i d		Sig	One teaspoonful t i d	

For convenience, only one dose is here ordered. Please omit name.

M D New York

**ANSWER**—One could not speak of any exact dose relations of iron and copper per body weight of patient. The usual aim is to give the patient as much as will not derange digestion or produce any other unfavorable results.

The prescriptions submitted might possibly be improved as follows:

	Gm or Cc
R Copper sulphate	0.20
Iron and ammonium citrate	2.00
Syrup of orange	30.00
Water	to make 60.00

M Label Teaspoonful in water three times a day after feeding.



The dose of iron and ammonium citrate is unproportionately large. It would be entirely adequate for the adult and might easily produce gastric irritation in a small child.

The criticisms that might be advanced as to the second prescription would be, first, that the syrup of soluble saccharated iron is not generally kept in drug stores, though, of course, it can be procured and, secondly, the addition of syrup of orange as a flavor might improve the palatability of the mixture.

The Council on Pharmacy and Chemistry has not accepted as positive the clinical evidence that the use of "copper-iron" preparations has advantage over the use of iron preparations alone.

#### INJECTION TREATMENT OF HEMORRHOIDS

*To the Editor*—Please tell me whether the injection treatment of non-complicated type of internal hemorrhoids with quinine and urea hydrochloride 5 per cent is a permanent cure or just a temporary relief. Please omit name.

M D Massachusetts

**ANSWER**—The injection treatment of uncomplicated internal hemorrhoids of moderate degree in the absence of external hemorrhoids, anal fissures, fistulas or prolapse and edema of the internal hemorrhoids, gives excellent results in the hands of experienced workers. As a great number of patients who suffer from hemorrhoids also have constipation and some have anal contraction or spasm, treatment must also be directed against these important factors, as otherwise recurrences are reasonably certain. In patients requiring dilation of the anus, this can be done under sacral anesthesia, the internal hemorrhoids then being injected at one sitting. Daily enemas, injections of hamamelis water, N F, into the rectum should be kept up for from ten days to two weeks. An anticonstipation diet is given and every effort made to combat the return of constipation. Under such management, cure is readily obtained unless another exciting factor such as portal cirrhosis with ascites, is present. It is stated by most writers that the injection treatment of internal hemorrhoids in the properly selected case, affords an even more permanent cure than surgical removal.

#### SIGNIFICANCE OF GOLD CHLORIDE CURVE

*To the Editor*—On routine examination of a man aged 39 a four plus Kolmer and Kahn test was obtained. He gave a history of a primary lesion at 19 followed by a short course of haphazard treatment. Examination otherwise is entirely negative including normal pupillary reactions, knee jerks and Romberg sign. After eight intravenous injections of neosphenamine up to 0.75 Gm the spinal fluid was drawn. Report shows 1 cell per cubic millimeter, a faint trace of globulin, a negative Kolmer reaction and a gold chloride curve of 0112210000. The patient is now starting a ten weeks course of mercury rubs as recommended in the public health bulletin you recommend. Treatment of Syphilis in General Practice. Since the gold chloride curve approximates the tabetic type and there is an absence of any signs of involvement of the central nervous system please advise me how this would influence the subsequent treatment. The patient has agreed to follow through a program of two or three years of treatment and observation. Please omit name.

M D California

**ANSWER**—Gold chloride curves of this type are seen frequently in spinal fluids that have been positive and have reversed to negative under treatment, so in all probability the gold curve in the case cited is of no significance. Accordingly the course of the subsequent treatment need not necessarily be modified although a reexamination of the spinal fluid when treatment is completed is indicated.

#### HEREDITY IN EPILEPSY

*To the Editor*—Will you kindly advise me as to the possibility of children having epilepsy whose maternal uncle developed typical idiopathic epilepsy during an acute nephritis with uremia. There is a questionable history of an attack at 14 and another at 20 years of age. Three years ago he had uremia with convulsions. Though the uremia has disappeared the convulsions persist at frequent intervals unless a ketogenic diet and the administration of phenobarbital are religiously followed. There is a moderate degree of mental impairment. A sister of the patient desires advice as to the possibility of her children if any having epilepsy. What is the present opinion as to epilepsy being a possible protein sensitivity? The patient consulting me is of a high degree of intelligence and has had no convulsions.

THEODORE A KENNEDY M D Washougal Wash

**ANSWER**—A history of epilepsy or of some nervous disease in the family has been established in more than 50 per cent of the cases. The disease is usually at least one generation removed, thus occurring in uncles, aunts and cousins. It is assumed that the disease tendency is transmitted as a mendelian recessive. Given the inherited nervous system defect, another

factor or other factors would be necessary to precipitate the seizures. Thus there is a possibility of the transmission of epilepsy in the family. Usually only one child in a family is affected. There is no satisfactory evidence that epilepsy is due to a protein sensitivity.

#### UREA NITROGEN AND NONPROTEIN NITROGEN

*To the Editor*—In a case of suspected uremia in either sex, such as hypertension, with or without albuminuria in the male or suspected uremia in a pregnant woman or even preeclamptic symptoms please state the relative diagnostic value as between the urea content and the total nonprotein nitrogen content in the same blood. From 25 to 35 mg of nonprotein nitrogen per hundred cubic centimeters of blood is said to be the normal range. What is considered as being the normal figure or normal range of urea in the blood expressed in milligrams per hundred cubic centimeters of blood determinations being made in all instances before the patient has had breakfast? Please omit name.

M D Missouri

**ANSWER**—The urea nitrogen is normally about 50 per cent of the total nonprotein nitrogen of the blood. With impairment of kidney function, such as might result in uremia, the urea nitrogen may be relatively increased, even up to 75 per cent of the total nonprotein nitrogen. In normal pregnancy the values for both the total nonprotein nitrogen and the urea nitrogen are slightly lower than normal, but in true eclampsia the total nonprotein nitrogen is definitely increased, while the urea nitrogen may be normal, or subnormal to the extent that it makes up only 20 to 40 per cent of the total nonprotein nitrogen. The normal amount of urea nitrogen in the blood is usually given as between 12 and 15 mg per hundred cubic centimeters.

#### IMMUNIZATION WITH DIPHTHERIA TOXOID OR TOXIN ANTITOXIN

*To the Editor*—In immunization for diphtheria I have recently been confronted with the problem of the proper time to start active immunization with either toxin antitoxin or toxoid (anatoxin). I have been desirous of obtaining an active immunization as soon as possible, owing to the local prevalence of the disease and in cases in which the usual prophylactic dose of antitoxin (1,000 units) has been given I have been undecided as to whether or not it would be immunologically sound to proceed at once with the use of the one or the other of the two methods for active immunization. Is it necessary or advisable to await the termination of the period of passive immunity conferred by the use of antitoxin?

JOHN F DALY M D, Pawhuska, Okla

**ANSWER**—There seems to be no good reason why active immunization should not be started before the termination of the period of passive immunity.

#### TUBERCULOUS CHOROIDITIS OR VITREOUS OPACITIES

*To the Editor*—Kindly give me your opinion of the treatment of choroiditis and vitreous opacities with ascending doses of tuberculin given twice a week subcutaneously also any other suggestions for treatment for cases of this sort.

A. R. RIDDLE, M D, Eagle Pass Texas

**ANSWER**—If the choroiditis or vitreous opacities are tuberculous, the use of ascending doses of tuberculin yields better results than any other known therapy. First, the tuberculous etiology must be determined by the exclusion of other possible factors, by positive cutaneous reactions, and by clinical recognition. Second, active or latent foci in the lungs must be excluded by roentgenographic and physical examination to avoid the possibility of activating such foci by the use of the tuberculin. Third, such form of tuberculin must be used as the physician is familiar with and whose potential danger he recognizes. Fourth, the cure must be started with infinitesimally small doses, preferably one one-hundred thousandth of a milligram, and increased cautiously. The injections should be given once every five to seven days rather than twice weekly, and any focal reaction must be avoided. Other treatment of the condition should be purely symptomatic.

#### GIANT CELL TUMORS—PARATHYROID FUNCTION—MULTIPLE MYELOMA

*To the Editor*—1 How is giant cell tumor (sarcoma) related to the parathyroids? 2 Is there any known relationship between parathyroid dysfunction and multiple myelomas? 3 Is Bence Jones protein always present in myeloma? 4 What is the best form of therapy for multiple myelomas of the skull and vertebrae? 5 What is the average duration of life in this condition? Please omit name.

M D New York

**ANSWER**—1 Multiple giant cell tumors and multiple osteitis fibrosa are associated with a metabolic disturbance in which there is elevation of blood calcium. Recent studies have demon-



strated that the underlying cause of this state is hyperparathyroidism. In many examples, removal of the parathyroid tumor has resulted in a disappearance of the bone lesions and return of the blood calcium to normal.

2 There is no known relation between parathyroid dysfunction and multiple myelomas.

3 Bence-Jones protein is found in the urine of approximately 65 per cent of patients suffering from multiple myeloma.

4 X-rays and radium have a tendency to control pain and accelerate the healing of pathologic fractures.

5 The average duration of life in multiple myeloma is approximately two years.

#### TONSILS AND HYPOTHYROIDISM

*To the Editor*—I am taking the liberty of writing you regarding a question that has come up in my practice. A boy, aged 6 years, has had a definite thyroid deficiency since birth. Mentally and physically he is abnormal. He has bad tonsils and I should like to know the opinion of some one who has seen a number of cases of this type as to the advisability and risk of general anesthesia and removal of the tonsils. He has taken thyroid extract in varying amounts since infancy and his pulse is rarely under 120.

M D, Georgia

**ANSWER**—In thyroid deficiency a characteristic myxedematous swelling occurs in the skin, tongue and pharynx, and it has been assumed that the hyperplasia of the tonsils and other lymphatic tissue of the pharynx is of the same character.

One finds statements in the literature that the lymphatic structures of the pharynx hypertrophy and perform a secretory function in deficiency of the thyroid gland. There is not the slightest proof that these lymphatic structures take on secretory function. But the observation that tonsils and adenoids tend to enlarge in hypothyroidism cannot be disputed. This fact leads to the conclusion that removal of the tonsils under these circumstances would not improve the general condition or affect the basic cause of the disorder.

It is interesting to quote from Dr. John Fraser, in the second volume of *Surgery of Childhood* (p. 662): "There is danger in submitting the subjects of hypothyroidism in any form to surgical interference; they stand operation exceedingly badly and surgical manipulation under anesthesia is inadvisable."

#### BLOOD SUGAR CURVE IN DIABETES

*To the Editor*—I have a patient suffering from diabetes mellitus whom I have seen three times in coma. The last time I gave her 420 units of insulin with dextrose intravenously within twenty hours before I was able to bring her out of the coma. This woman, at present stabilized, is getting 37 units of insulin daily in two doses. Her blood sugar is 220 mg and I am unable to reduce it below this point. If I increase the insulin 2 or 3 units at one of these daily doses, the patient presents symptoms of hypoglycemia. Could a blood sugar of 220, taken in the morning on a fasting stomach, be considered normal? If not is there any way that this can be reduced? The patient feels fine otherwise, maintains her weight, drives a car and is able in other ways to perform all her work. Please omit name.

M D, New York

**ANSWER**—It must be recalled that, when insulin is being given, the highest blood sugar of the day is apt to be in the morning before breakfast, whereas in cases in which insulin is not being given the morning blood sugar usually is lowest. Therefore, in this case the important factor would be to ascertain what the blood sugar curve during the day is at various times after the injection of insulin. Whereas a blood sugar of 220 mg in the morning cannot be considered normal, it is frequently the better part of therapeutic wisdom not to attempt to reduce this blood sugar too low, and from the description of this case it would seem that an optimal therapeutic result is being obtained by the present method of therapy.

#### DIAGNOSIS OF MASS IN BREAST

*To the Editor*—Following a normal delivery my wife fourteen days later developed a round firm mass in the right breast just beyond the areolar margin. This mass was painful, warm but not fluctuant. It could be moved freely and was apparently not firmly attached to the skin or subcutaneous tissue. Irritation was generally poor and insufficient. The right breast was the less efficient of the two. Nursing was stopped at the end of two weeks. The mass at present (two months from delivery) is the size of a walnut about one fourth of its maximum size. It is not painful. What can be done to eliminate this mass? What relation if any has this type of tumor to the future development of cancer of the breast? The patient is 27 years old. Please omit name.

M D, Pennsylvania

**ANSWER**—The most likely diagnosis is galactocoele or abscess. The fact that the mass has diminished in size is further evidence that the lesion is more likely inflammatory than neo-

plastic. If the mass is still present after two months and is not showing signs of rapid disappearance, surgical excision is the wisest and safest procedure to adopt. If the lesion proves to be galactocoele or abscess, there is no evidence that these conditions have any relation to cancer of the breast. There is a remote possibility that the lesion is a fibro-adenoma. Transillumination of the breast might be an aid in the diagnosis.

#### TIC DOULOUREUX

*To the Editor*—I have a patient, a married woman aged 51 who has been suffering with spasmodic neuralgia of the face—tic douloureux—for several years. The history is negative except for the presence of eczema on both arms near the elbow for the past fifteen years or longer and attacks of headache especially just before menstruation. Menstruation has practically ceased, though it has appeared three or four times during the past twelve months, the last time two months ago. The neuralgic attacks come on suddenly and last for a few minutes whereupon they ease off. The pain is almost unbearable at times. Sometimes she will go for weeks or even longer without attacks, then they come on regularly for days at a time. Can you suggest any relief, even temporary, from the attacks, other than resection or nerve blocking? Please omit name.

M D, Mississippi

**ANSWER**—If this is true tic douloureux, a spasmodic unilateral pain, limited to the distribution of the trigeminal nerve, it is unnecessary to let the patient suffer any longer. If the patient never has had an alcohol injection, this may be used first. When the pain returns, as it probably will in a year or more, it will be time to decide whether to inject again or have a neurologic surgeon section the sensory root of the fifth nerve. This operation is so safe and satisfactory in the hands of the special surgeon that there is no longer any excuse for withholding it from the patient except that many surgeons prefer to let the patients have one experience with alcoholic injection so as to get used to the numbness produced. Temporary relief is sometimes obtained from the inhalation of trichlorethylene twenty-five drops on a handkerchief, three or four times a day.

#### HERPES PROGENITALIS

*To the Editor*—Can you tell me a curative treatment for recurrent herpes progenitalis? Please omit name and city.

M D, New York

**ANSWER**—Herpes progenitalis is frequently due to secretions that accumulate under the prepuce. These cases are usually cleared up by circumcision. In circumcised individuals the use of green soap and water each morning, followed by applications of a drying powder such as aristol powder, will usually prevent recurrence.

#### IRRITATION OF EYES FROM BOTTLED GASES

*To the Editor*—A patient recently told me that her eyes have been bothering her (burning and bloodshot appearance) since she has been using Phul gas for cooking. She says that the neighbors also complain of the same condition when they come into the kitchen. Her neighbors use Pyro fax for cooking and do not experience any difficulty in their own homes. My patient does not experience any difficulty when she goes into the kitchen of her neighbors and did not have any difficulty last year when she was using gas from the regular mains. Have you heard of any similar complaints or do you know what irritating gases give off?

WENDELL L. HUGHES, M D, New York

**ANSWER**—All the bottled gases are similar in their chemical composition, some being natural products and the others synthetic saturated hydrocarbons, such as propane. In the majority of the gases there is a slight trace of butane, which cannot be eliminated. On combustion the gaseous products are water vapor, carbon monoxide (from 0 to 5 per cent), and carbon dioxide (from 0 to 12 per cent). The relative percentages depend on the completeness of combustion. Under some conditions that are almost impossible with an open flame burner formaldehyde may be produced. Apart from the latter, none of the other gaseous products of combustion should cause the ocular irritation referred to. The probability is that impurities have crept into the gas and that incomplete combustion has allowed of their distribution throughout the room in gaseous form.

#### LOCAL USE OF OIL OF MUSTARD

*To the Editor*—In what strength may oil of mustard be used (in petrolatum) for local application to the skin? Please omit name.

M D, Pennsylvania

**ANSWER**—The mustard ointment of the National Formulary contains 2 per cent of volatile oil of mustard, which might be considered average strength.

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

ALASKA Juneau March 14 Sec., Dr Harry C DeVigne, Juneau  
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS Milwaukee,  
June 12 Sec. Dr William H Wilder 122 S Michigan Blvd., Chicago  
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The written  
examination will be given in cities of the United States and Canada  
where there is a Diplomate who may be empowered to conduct the  
examination April 1 The general oral clinical and pathological exami-  
nation will be held in Milwaukee June 13 Sec. Dr Paul Titus  
1015 Highland Bldg., Pittsburgh  
AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee June 12 Sec.,  
Dr W P Wherry 1500 Medical Arts Bldg. Omaha  
CALIFORNIA Los Angeles Feb 27 to March 2 Sec., Dr Charles B  
Pinkham 420 State Office Bldg., Sacramento  
CONNECTICUT Basic Science New Haven Feb 11 Prerequisite to  
license examination Address State Board of Healing Arts, 1895 Yale  
Station New Haven  
NATIONAL BOARD OF MEDICAL EXAMINERS The examination will be  
held in centers where there are five or more candidates, Feb 13 15  
Ex Sec. Mr Everett S Elwood 225 S 15th St., Philadelphia  
NEVADA Reciprocity Carson City Feb 6 Sec. Dr Edward E  
Hamer, Carson City  
NEW YORK Albany, Buffalo New York Syracuse Jan 30-Feb 2  
Chief Professional Examinations Bureau Mr Herbert J Hamilton,  
Room 315 State Education Bldg Albany  
PUERTO RICO San Juan March 7 Sec., Dr O Costa Mandry,  
Box 536 San Juan  
VERMONT Burlington Feb 15 17 Sec. Dr W Scott Nay Underhill  
WYOMING Cheyenne Feb 6 Sec., Dr W H Hassed Capitol Bldg.,  
Cheyenne

### California July Examination at San Francisco

Dr Charles B Pinkham, secretary, California State Board  
of Medical Examiners, reports the written examination held  
at San Francisco, July 12-14, 1932 The examination covered  
9 subjects and included 90 questions An average of 75 per  
cent was required to pass One hundred and twenty-four can-  
didates were examined, 115 of whom passed and 9 failed The  
following colleges were represented

College	PASSED	Year Grad	Number Passed
College of Medical Evangelists	(1932 11)		11
Stanford University School of Medicine	(1930 2) (1932 27)		29
University of California Medical School	(1931) (1932 43)		44
University of Colorado School of Medicine	(1932)		1
Loyola University School of Medicine	(1932)		1
Northwestern University Medical School	(1932 4)		4
Rush Medical College	(1932 3)		3
State Univ of Iowa College of Med	(1922) (1929) (1931)		3
University of Kansas School of Medicine	(1931)		1
Johns Hopkins University School of Medicine	(1929) (1931)		2
Boston University School of Medicine	(1931)		1
Harvard University Medical School	(1929) (1931)		2
University of Minnesota Medical School	(1931)		1
Washington University School of Medicine	(1931 2) (1932)		3
Creighton University School of Medicine	(1932 4)		4
University of Nebraska College of Medicine	(1931)		1
University of Oregon Medical School	(1931)		1
Hahnemann Medical Coll and Hosp of Philadelphia	(1932)		1
University of Pennsylvania School of Medicine	(1931)		1
Queen's University Faculty of Medicine Ireland	(1915)*		1

College	FAILED	Year Grad	Number Failed
University of California Medical School	(1932 2)		2
Creighton University School of Medicine	(1932 2)		2
Vanderbilt University School of Medicine	(1931)		1
Karl Franzens Universität Med Fakultät Austria	(1928)		1
Moscow State University Faculty of Medicine	(1919)†		1
Psycho-Neurological Institute Medical College, Russia	(1917)†		1
University of Tomsk Faculty of Medicine	(1913)		1

\* Certificate not as yet issued

† Verification of graduation in process

### California July Examination at Los Angeles

Dr Charles B Pinkham, secretary, California State Board  
of Medical Examiners, reports the written examination held  
at Los Angeles July 25 28 1932 The examination covered  
9 subjects and included 90 questions An average of 75 per  
cent was required to pass Eighty four candidates were exam-  
ined 75 of whom passed and 9 failed The following colleges  
were represented

College	PASSED	Year Grad	Number Passed
College of Medical Evangelists	(1928) (1931) (1932 40)		42
Stanford University School of Medicine	(1932 5)		5
University of California Medical School	(1932)		1
University of Colorado School of Medicine	(1931)		1
Loyola University School of Medicine	(1931)		1
Loyola University School of Medicine	(1932 2)		2
Northwestern University Medical School	(1919-8) (1932)		2
Rush Medical College	(1932 6)		6
University of Illinois College of Medicine	(1932)		1
Indiana University School of Medicine	(1931)		1

University of Kansas School of Medicine	(1931 2)	2
Harvard University Medical School	(1932)	1
University of Michigan Medical School	(1931 3)	3
University of Minnesota Medical School	(1932)*	1
St. Louis University School of Medicine	(1931)	1
Creighton University School of Medicine	(1931), (1932 2)	3
Hahnemann Medical Coll and Hosp of Philadelphia	(1931)	1
McGill University Faculty of Medicine	(1931)	1

College	FAILED	Year Grad	Number Failed
College of Physicians and Surgeons Arkansas	(1910)		1
College of Medical Evangelists	(1932 2)		2
Loyola University Medical School	(1925)		1
University of Illinois College of Medicine	(1931)		1
Medical College of Virginia	(1931)		1
Medizinische Fakultät der Universität Wien	(1930)		1
Regia Universita di Roma degli studi Facolta di Medi- cina e Chirurgia	(1902)†		1
Universitatea din Bucuresti Facultatea de Medicina	(1921)†		1

Dr Pinkham also reports 4 physicians licensed by endorse-  
ment on June 16 and 23 The following colleges were  
represented

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Rush Medical College	(1911) U S Army		
University of Illinois College of Medicine	(1930) U S Navy		
University of Minnesota Medical School	(1921) U S Navy		
University of Buffalo School of Medicine	(1900) U S Army		

\* This applicant has received an M B degree and will receive an M D  
degree on completion of an internship  
† Verification of graduation in process

### Michigan June Examination

Dr Nelson McLaughlin, secretary, Michigan State Board  
of Registration in Medicine, reports the written examination  
held at Ann Arbor and Detroit, June 7-9, 1932 The examina-  
tion covered 14 subjects and included 100 questions An average  
of 75 per cent was required to pass Two hundred and two  
candidates were examined, all of whom passed The following  
colleges were represented

College	PASSED	Year Grad	Per Cent
University of Colorado School of Medicine	(1931)		82.6
Yale University School of Medicine	(1930) 82.7	(1931)	83.6
Emory University School of Medicine	(1931) 84.3	(1931)	85.7
Northwestern University Medical School	(1931)		85.3
(1932) 83.7, 86.6			
Rush Medical College	(1932) 81.8 83.9, 84 84.9	85.2 *	85.3 85.8
School of Med of the Division of Biological Sciences, University of Chicago	(1931) 82.5	(1932)	83.3
University of Illinois College of Medicine	(1932)		83.3
Johns Hopkins University School of Medicine	(1931)		84.4
Harvard University Medical School	(1929)		82.1
(1930) 83.7, 86 (1931) 82.7			
Detroit College of Medicine and Surgery	(1932)		85.1
(1932)† 79.5 80.6 80.8 81.2, 81.7 81.7 82.1, 82.2 82.2 82.3 82.5 82.5 82.6 82.8 82.8 82.9 83 83, 83.2 83.2 83.3 83.5 83.6 83.7 83.8, 83.9 83.9 83.9, 84.1 84.2 84.3, 84.4, 84.5, 84.5, 84.6 84.8, 84.9 84.9 85 85 85, 85 85.2 85.2 85.3 85.4 85.6 85.6 85.6 85.7 85.7 85.7 86.3 86.3 86.4 86.4 87.4			
University of Michigan Medical School	(1931) 82.7 (1932) 80.2 80.9 81.2 81.8 82 82 82 82.3 82.3 82.4 82.4 82.4 82.5, 82.6, 82.8 82.9, 82.9 83 83 83 83.1 83.1 83.1 83.3, 83.3 83.3 83.4, 83.4 83.5 83.5 83.5 83.5 83.6 83.6 83.6 83.7 83.7 83.7 83.7 83.8 83.8 83.9 83.9 84.1, 84.2 84.2 84.2 84.2 84.2 84.3 84.3 84.3 84.3 84.4 84.4 84.5 84.5, 84.6 84.6 84.7 84.7, 84.9, 84.9 84.9, 84.9 85 85.1 85.1 85.1 85.1 85.2 85.2 85.3 85.3 85.3 85.4 85.4 85.5 85.5 85.5 85.5 85.5 85.5 85.6 85.6 85.7 85.7 85.7 85.8 85.8 85.9 86 86 86.2, 86.5 86.5 86.5 86.7 86.7 86.8 86.9 87 87, 87, 87.1 87.1 87.3 87.3	(1930)	84.4
University of Minnesota Medical School	(1932)		85.5
University of Pittsburgh School of Medicine	(1914)		80.7
Marquette University School of Medicine	(1932)		83.9
University of Alberta Faculty of Medicine	(1931)		85.7
Trinity Medical College Toronto	(1899)		82
University of Toronto Faculty of Medicine	(1931) 81.6		85.1
University of Western Ontario Medical School	(1932)		82.3
Universidad de la Habana Facultad de Medicina y Farmacia	(1929)		82.74
Kongelige Frederiks Universitets Medisinske Fakultet Norway	(19 0)		81.4

\* This applicant has received a four year certificate and will receive  
a Michigan license and an M D degree on completion of an internship

† These applicants have received an M B degree and will receive a  
Michigan license and M D degree on completion of an internship

‡ Verification of graduation in process

### Connecticut Homeopathic Report

Dr Edwin C M Hall, secretary, Connecticut Homeopathic  
Medical Examining Board, reports the written examination  
held in New Haven July 12 1932 The examination covered  
7 subjects and included 70 questions An average of 75 per  
cent was required to pass One candidate was examined and  
passed The following college was represented

College	PASSED	Year Grad	Per Cent
New York Homeopathic Med Coll and Flower Hosp	(1932)		85

## Book Notices

**Treatment of Syphilis** By Jay F. Schamberg, A.B. M.D. Professor of Dermatology and Syphilology in the Graduate School of Medicine of the University of Pennsylvania and Carroll S. Wright B.Sc. M.D. Professor of Dermatology and Syphilology in the Temple University School of Medicine. Cloth Price, \$8. Pp. 658 with 62 illustrations. New York & London: D. Appleton & Company, 1932.

During the quarter century that has elapsed since Ehrlich recommended arsphenamine, the medical literature has become voluminous with regard to the arsenical preparations and their derivatives and substitutes. Schamberg and Wright have gathered together from the literature of this country and Europe the experiences of able syphilologists, and by adding their own experiences have created this book on syphilotherapy. Such a compilation of factorial data is not only highly commendable but particularly appropriate at this time. The book consists of thirty-three chapters, of which seven are devoted to mercury, two to bismuth, and twelve to the arsenobenzenes, including the complications and chemotherapy of the drugs. The rest of the book is devoted to the treatment of the different phases of syphilis, with particular attention to the various types of fever treatment. Illustrations are not too numerous, and the reading is made easier by the omission of many cumbersome charts and graphs. Several of the illustrations of the technic employed by the authors are subject to criticism, the technic for the intravenous injection of arsphenamine appears awkward, and the method of guiding the needle with the fingers when doing a spinal fluid tap is far from a good example of an aseptic surgical procedure. In several chapters the references have not been brought down to date, and it would appear that these chapters were completed several years ago. The opinions of syphilologists of broad experience are offered, together with those of the authors, in a manner that permits the reader to grasp easily the prevailing concept of a drug or system of treatment. The parts of the book dealing with the complications of treatment and measures to control them are well done. To the practitioner who treats syphilis occasionally, easy access is given to the various systems of treatment now employed in the different phases of syphilis and its complications. The value of the arsenobenzenes is upheld, and rightfully so, wherever assailed. The authors' concept of the treatment of patients with latent and Wassermann fast syphilis is especially noteworthy. When the supply of arsphenamine became exhausted in this country during the recent war, Schamberg gathered together a group of workers and started to manufacture it, thus relieving a situation which had assumed serious public health aspects. In commending this book on the treatment of syphilis to the student, general practitioner and syphilologist, the occasion is also taken to express to the senior author appreciation of his efforts in establishing in this country the synthesis of the arsphenamines.

**Tuberkulose und Umwelt** Von Stadtmedizinalrat Dr. med. Gustav Hoch, Leiter des Stadtgesundheitsamtes Meissen. Nr. 47, Tuberkulose-Bibliothek. Belhefte zur Zeitschrift für Tuberkulose. Herausgegeben von Prof. Dr. Lydia Rabinowitsch. Paper. Price, 3.50 marks. Pp. 35, with 1 illustration. Leipzig: Johann Ambrosius Barth, 1932.

The author has accumulated valuable statistics on the relation of environment to tuberculosis mortality. Such environment is considered as internal and external. The former has to do with psychic, mental and physical influences. For example, the abuses of pleasure, sex and drinking are unfavorable, while the advantages of a highly ordered mind and well developed body are among the beneficial factors. The external factors include housing, weather, climate and occupation with all their variations. General conditions are given first, then a special and thorough statistical study of such factors in the small city of Meissen has been made. Among general conditions the author cites figures to show that hot climates, low altitudes and moist atmospheres are more unfavorable than their opposites, although some of these statistics are admittedly objectionable. More important are financial and social conditions, which affect tuberculosis according to the position on their respective scales. Age is a factor. Immunity through previous infection affords limited protection only under other favorable conditions. Industrialization has a certain and far reaching effect, but care must be used in interpretation of associated factors. A generation ago, country places had tuberculosis death rates higher than

the cities, owing to long working hours, unhygienic surroundings, ignorance of public health and the eating of poor food, but since then the improvement of their lot and the tremendous increase of industrialization in certain cities has tended to equalize them more.

The specific studies of the small city of Meissen (on the upper Elbe) constitute one of the most thorough analyses available of the relationship of the environmental factors of a small industrial community to tuberculosis. The author shows how the war brought on a shortage of buildings with resulting crowding and congestion (59.78 per cent from 1926 to 1929), how the old type of architecture in certain parts of the city caused unhygienic conditions, poor ventilation, a lack of sunlight, and increased moisture, how a tremendous increase in unemployment resulted in insufficient nourishment for about 70 per cent of the population with attendant increase in the tuberculosis death rate in 1931, how a moisture laden and cloudy atmosphere in enclosed valleys probably caused an increase in tuberculosis in newer parts of the city (Elbtal).

The industries appear to affect the tuberculosis death rate in a few principal ways, depending on the constitution of the individual (young and weakly men and overworked women in the textile industries), lower wages resulting in less leisure, health education, proper food and living conditions, and silica dust and heat in the air, producing silicosis which nearly always becomes complicated with tuberculosis. The silicosis appeared in proportion to the silica dust with which the worker came in contact. The fire brick workers come first, then metal workers, the list being led by the sandblasters in the smelters, then, in the order of their being affected, are factory, porcelain and business workers, and officials. The porcelain workers had a relatively high silicosis but their higher pay helped them ward off tuberculosis more than some of other less profitable occupations.

The author points out certain discrepancies in the statistics, for example, the people "without occupation" had a high death rate from tuberculosis, but this group contained many housewives whose occupation before marriage was textile work. On the whole, however, his figures are clear cut, convincing and in general compatible with other modern opinion.

**Essentials of Pathology** By C. Russell Salisbury, M.D., C.M., Professor of Anatomy, University of Oklahoma. Cloth. Price, \$2. Pp. 276 with 10 illustrations. New York: Macmillan Company, 1932.

This was written primarily as a textbook for nurses for courses in pathology. The contents consist largely of brief considerations of the general principles of pathology and in a similar brief way of the underlying pathologic changes of specific diseases as well as the special pathology of the various systems of the body. The last chapter is devoted to a brief discussion of the indications and interpretations of the common laboratory procedures. The style is simple and clear, but for purposes of teaching in many schools the sections on general pathology are altogether too brief. Perhaps for the average school of nursing this book may answer the purpose, but the recent rapid improvements in standards and requirements in many schools of nursing will demand a more comprehensive textbook on pathology. One worthy feature of the portion on special pathology is the clinical correlation between the tissue changes and the symptomatology. The volume is suggested as a concise textbook for medical students but is entirely inadequate and should not be encouraged in the present medical curriculum in view of the many excellent textbooks now available.

**Kleine Chirurgie** Von Professor Dr. Hans Kurtzahn. Second edition. Paper. Price, 13.50 marks. Pp. 463 with 167 illustrations. Berlin: Urban & Schwarzenberg, 1932.

This edition, published three years after the first, is evidence of the popularity of the book abroad. Although one would scarcely class as minor operations some of the operative procedures described in the chapter on tumors, they cannot be classed as major. On the whole, the author has confined himself closely to the limits of minor surgery and has clearly set forth the established procedures which the general practitioner may use in almost any emergency he may encounter. It seems strange that he relegates nitrous oxide anesthesia to the clinic and still goes into great detail about ether and chloroform. He has given in detail the differential diagnosis of most of the more common pathologic lesions, such as chronic inflammations and

tumors of the surfaces of the body. In criticism, one might complain that there is no bibliography and little discussion of the relative merits of various methods of therapy. Some methods of questionable value are stated authoritatively. A unique chapter dealing with the treatment of industrial cases, particularly with the mental attitude of such patients, is excellent. Such a chapter might well be added to similar English textbooks. The paper is excellent, thereby enhancing the value of the many well selected illustrations taken from photographs and drawings.

**Medical Entomology** By Robert Matheson Ph.D. Professor of Entomology New York State College of Agriculture Cornell University Cloth Price \$5 Pp 489 with 211 illustrations Springfield Ill. Charles C Thomas 1932

In his preface the author states that the present volume is an introductory textbook offered to the physician the entomologist the public health worker, the student and the layman, both that it may inform and that it may arouse a keener interest in the problems of insect-borne diseases. There are twenty chapters, of which the first is a general and historical account of arthropods and human disease and the last is devoted to methods of collecting, preserving and mounting insects. The remaining chapters consider each of the groups of insects and related arthropods that are of medical importance. Under each group can be found an outline of the characteristics and habits, anatomy, classification, relation to disease and control. In doing this the author has reached a nice balance in the allocation of space. Thus, in the case of mosquitoes there is a chapter on the more purely entomological consideration of the Culicidae, another on the relation of mosquitoes to human disease, and a third on the problem of mosquito reduction. There is also a special chapter on poisonous and urticating arthropods. The author has condensed within the space of a comparatively small book an enormous amount of accurate and authoritative information. Most of the criticisms that can be raised are matters of opinion and apply to the omission of details. Thus the chapter on mosquito control gives an admirable summary of actual control methods but might be of more practical value if more attention had been paid to the difficult question of ascertaining the important malaria carrier of a district prior to "species control." The volume is well illustrated and indexed and will find a welcome place among the several recent works on medical entomology that have appeared.

**Krebsverbreitung Krebsbekämpfung Krebsverhütung** Von Erwin Liek Paper Price 5 marks Pp 232 Munich J F Lehmann 1932

This popular work on cancer follows, on the whole, conventional lines, discussing statistics, therapy, causes and, finally, protective measures. A great deal of material has been collected and analyzed but the author has not been sufficiently critical in the selection of his material for discussion and the tone is somewhat emotional. He makes the point that the complete realization of the phrase "early diagnosis and prompt operation on cancer" is not synonymous with a cure, but even though uncritical the book contains a sufficiently large amount of information to be of interest to the expert who is capable of drawing his own conclusions.

**Science in Action A Sketch of the Value of Scientific Research in American Industries** By Edward R Weldlein and William A Hamor Mellon Institute of Industrial Research Pittsburgh Cloth Price \$3 1p 310 with 33 illustrations New York and London McGraw Hill Book Company Inc 1931

This is a readable account of the exploits of research and especially of industrial research. The facts are interesting and have a definite place in the repertory of subjects about which the well informed man talks. It would seem that at times the subject is viewed through rose colored glasses as only the successes are discussed. The authors might have obtained more information before discussing new pharmaceutical preparations. They have singled out one of a series of marketed barbituric acid hypnotics and stated that it gives equivalent results when used in smaller doses than required by other sleep producing drugs. This is not an adequate statement clinically or chemically. There are literally hundreds of hypnotics of the same series about which little is known. Neither the work of the Council on Pharmacy and Chemistry nor the work of the A M A Chemical Laboratory is mentioned in connection with the discussion on new remedies. Although the authors are

officers of the Mellon Institute of Industrial Research, this institution is not given undue publicity in the book. On the whole, the book is to be commended.

**Lærebog i Menneskets Arvelighedsforhold udarbejdet til Brug for Læger og medicinske Studerende** Af Oluf Thomsen Dr Med Prof V Universitetet Paper Pp 239 with 42 illustrations Copenhagen Levin & Munksgaard 1932

The author is a prolific writer. Only recently a textbook by him on infectious pathology and related subjects was published. The present textbook on heredity is intended especially for medical students and physicians. Hereditary tendencies are of such significance in medicine that the physician simply must be acquainted with the fundamental laws of heredity and its manifestations in the realm of disease. All teaching of heredity has changed completely since 1900, when Mendel's epochal work became known generally. The first part of the book is devoted to the explanation of the mendelian laws. The presentation is clear and simple. The second part treats briefly with the human aspects of heredity. Hereditary hemophilia should have been included in the index. The book fulfils its purpose satisfactorily.

**A Pocket Guide to Medical Life Assurance** By Jehangir J Cursetji MD LRCP LRCS Chief Medical Officer the Oriental Life Assurance Co Ltd Third edition Boards Pp 274 Bombay Union Press, 1932

This is a concise but thorough exposition of the methods and problems of life insurance from the medical standpoint, written largely from the point of view of the chief examiner at the home office or the medical referee when dispute has arisen. The author exhibits a tendency to accept too many applicants who are second class risks through "rating up" the premium, by arbitrarily raising the age of the applicant. The type of careful methodical examination stressed in this volume, together with a painstaking personal and family history, is of course ideal but is on a much higher plane than that performed by the ordinary medical examiner. Much could be said about the inadequacy of the customary fee for life insurance examination in this connection.

**Radiologia clinica da vesícula biliar normal e pathologica pela colecystographia.** Por Saint Pastous Trabalho do Instituto de Radiologia Dr Saint Pastous em Porto Alegre Paper Pp 171, with illustrations Porto Alegre Brasil Livraria do Globo 1929

This monograph on cholecystography is chiefly a summary of the work of Graham, Cole, Copher and Moore, with a discussion of some of the other literature. The author's own experience with 140 cases is given. Since the book is written in Portuguese it will probably not find many American readers. The author agrees with all other writers on the subject that the method is of great value in the diagnosis of various disorders of the gallbladder.

**Epidemiology Historical and Experimental The Hexter Lectures for 1931** By Major Greenwood F.R.S The University of London Cloth Price \$1 50 Pp 80 with illustrations Baltimore Johns Hopkins Press London Oxford University Press 1932

The three lectures delivered at Johns Hopkins University in 1931 by Major Greenwood are here reprinted in attractive form. They consist chiefly of pleasant, if somewhat discursive, historical discussions and a more specific attempt to appraise the "experimental epidemiology" of Webster, of Topley and of Greenwood himself. This work is dealt with clearly and candidly. There will be few to quarrel with the author's conclusions in his closing paragraph. "In the biological experimentation I have described there can be no crucial experiments, reasoning must be stochastic, inferences no more than probable."

**Lehrbuch der Urologie mit Einschluss der männlichen Sexualerkrankungen** Von Dr Leopold Casper a o Professor an d Universität Berlin Fifth edition Paper Price 35 marks Pp 496 with 170 illustrations Berlin Urban & Schwarzenberg 1932

This textbook comes up to the standard to be expected from an author known as an experienced clinician and a renowned writer on urology. A certain unevenness in discussing the various topics may be ascribed to the author's attempt at covering in a rather limited space the enormous field indicated in the title. It is to be regretted that there is rather scanty attention allotted to the pertinent American literature, though in this country the development of modern urology has progressed in amazing strides. This omission may account for

some striking deficiencies, such as dismissing with a few words urethral strictures in the female and the failure of mentioning the Hagner operation and protein therapy in treating acute epididymitis. The same neglect is apparent in the discussion of open electrocoagulation of malignant vesical tumors and trans-urethral electroresection in certain instances of prostatic hypertrophy. An innovation is the special chapter devoted to a concise discussion of the so-called medical kidney diseases.

## Medicolegal

### Award of Compensation as Bar to Malpractice Suit

(Cooke v. Buntin (Kan.) 11 P. (2d) 1016)

Cooke was paid compensation under the Kansas compensation act for an industrial accident in which the bones in his left elbow and in the fourth finger of his left hand were fractured. Thereafter he instituted an action for damages for malpractice against the defendant-physician, who treated him when he was injured. He alleged that through the defendant's negligent treatment his elbow had become stiff permanently and that he had lost the use of his fourth finger. In his answer the defendant set up, among other matters, the recovery of workmen's compensation by the plaintiff, as a bar to this action. The trial court sustained a demurrer to the answer and the defendant appealed to the Supreme Court of Kansas.

The defendant contended that an aggravation of an injury due to an industrial accident, occasioned by the negligence of a physician in treating the injury, is a part of the original injury, that an award of compensation under the workmen's compensation act includes compensation for both the industrial injury and its aggravation, and that no separate action can be maintained against the physician for the recovery of additional damages for the aggravation. Notwithstanding the fact, said the Supreme Court of Kansas, that the contention of the defendant is in accord with the rule announced by the courts of many jurisdictions, that rule does not prevail in Kansas. In *Ruth v. Hitherspoon-Englar Co.* 98 Kan. 179, 157 P. 403, the Supreme Court of Kansas held that

So much of an employee's incapacity as is the direct result of unskillful medical treatment does not arise "out of and in the course of his employment" with the meaning of that phrase as used in the statute laws 1911, c. 218 sec. 1. For that part of his injury his remedy is against the persons answerable therefor under the general law of negligence.

There is no language in the Kansas compensation act which explicitly declares that the aggravation of an industrial injury caused by the negligence of a physician who treats the injury is to be regarded as a part of the original injury, and that the workman has no other redress for such negligence than the award provided by the compensation act. Under the common law, an employer who selected a skilful physician or surgeon to treat his injured or ailing servant discharged his full duty to that servant and was not liable for the mistakes or negligent acts or omissions which such professional man might subsequently commit. *Atchison T. & S. F. R. Co. v. Zeiler* 54 Kan. 340, 38 P. 282.

Since the decision in the *Ruth* case supra, continued the Supreme Court, the Kansas legislature has radically changed the workmen's compensation act and has enlarged the master's duty to his servant. It has not, however, specifically changed the particular rule under consideration. Cases can readily be imagined in which the scheduled compensation for an industrial injury would be grossly inadequate for the consequences resulting from the malpractice of a physician in treating the injury. An industrial wound in the face might cause a workman no serious impairment in earning capacity and consequently the compensation award for such an injury would be trivial. If that facial injury were negligently treated by a physician the result might render the workman's features hideous. Surely such negligence would constitute a tortious wrong for which the physician ought to pay. To hold that the moderate often nominal awards of the compensation act would limit the workman's redress for such negligence would shock public conscience. The judgment of the trial court in favor of the employee was accordingly affirmed.

**Medical Practice Acts Superfluous Allegations in Information**—The defendant, a chiropractor, was convicted of practicing medicine without a license and appealed to the court of criminal appeals, Texas. He alleged that there was a material variance between the allegations of the information on which the prosecution against him was predicated and the undisputed evidence adduced at his trial. The information charged him with treating Fred Tholen and receiving compensation from him. The evidence showed that Fred Tholen was a child of 12 years and that the defendant's compensation for treating him was paid by Tholen's mother. The defendant admitted that the source from which compensation is received is not material under the medical practice act. He claimed that, while it was unnecessary to make this allegation in the information, such an allegation having been made it is descriptive of an essential element of the offense and must be proved as alleged. But said the court, allegations not essential as elements of an offense charged which may be entirely omitted without affecting the charge against the defendant and without detriment to the indictment, are considered as a mere surplusage and may be disregarded in evidence. The defendant's contention, therefore, is without merit. The defendant next urged error in the action of the trial court in refusing to charge the jury that if they believed or had a reasonable doubt that he was engaged in chiropractic and that chiropractic did not constitute the practice of medicine, they should acquit the defendant. But, said the court, the facts constituting the elements of the offense charged against the defendant were testified to by witnesses for the state, they were not contradicted by any testimony offered by the defendant. There being no controversy over the facts, it became a question of law and not of fact. The charge requested by the defendant was an attempt to have the jury pass on a question of law and not a disputed issue of fact. The action of the trial court in this regard was proper. The conviction was accordingly affirmed—*Hilly v. State (Texas)*, 49 S. W. (2d) 786.

**Medical Practice Acts Variance Between Complaint and Information**—A complaint was filed charging that the defendant, apparently a chiropractor, without having a license to practice medicine, "did then and there treat a human being." An information, based on this complaint, was filed, charging that the defendant without having a license to practice medicine "did then and there treat a human being for a disease and disorder." The defendant was convicted and appealed to the court of criminal appeals, Texas. The information said the court of criminal appeals, charged the defendant with the unlawful practice of medicine under subdivision 2 of article 741 of the Penal Code, reading in part as follows:

Any person shall be regarded as practicing medicine within the meaning of this law (2) who shall treat or offer to treat any disease or disorder by any system or method and charge therefor directly or indirectly, money or other compensation.

It is necessary, in order to charge an offense under this article that the person charged should either treat or offer to treat a disease or disorder. Thus the complaint failed to allege, and there is a clear variance between the complaint and the information. The complaint is not sufficient to charge a violation of the law, while the information charges one. Without a valid complaint, the information is worthless and will not sustain a conviction. The judgment of conviction was accordingly reversed and the prosecution ordered dismissed—*Jarrell v. State (Texas)*, 49 S. W. (2d) 752.

## Society Proceedings

### COMING MEETINGS

American College of Physicians Montreal February 6-10 Mr. E. R. Loveland 135 135 South 36th Street, Philadelphia Executive Secretary  
Annual Congress on Medical Education Medical Licensure and Hospitals Chicago February 11-14 Dr. W. D. Cutter Council on Medical Education and Hospitals 535 North Dearborn St. Chicago Secretary  
Pacific Coast Surgical Association Del Monte Calif. February 21-25, Dr. Edgar L. Gilcreest 384 Post Street San Francisco Secretary  
Southern Surgical Congress Atlanta Ga. March 6-8 Dr. B. T. Bessley 45 Edgewood Avenue Atlanta Secretary



## Current Medical Literature

### AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (\*) are abstracted below.

### American Heart Journal, St. Louis

8 1154 (Oct.) 1932

- \*Mechanism of Adjustment of Circulation in Hyperthyroidism (Thyrotoxicosis) W M Yater, Washington, D C—p 1
- Cardiac Histopathology in Thyroid Disease Preliminary Report C V Weller, R C Wanstrom, H Gordon and J C Bugher, Ann Arbor Mich—p 8
- Study of Heart in Hyperthyroidism G Rake and D McEachern, Baltimore—p 19
- Heart Rate During Sleep in Graves' Disease and in Neurogenic Sinus Tachycardia E P Boas New York—p 24
- Signs and Symptoms of Heart Changes in Toxic Goiter Clinical Study of One Hundred and Forty Eight Cases C T Burnett and E Durbin, Denver—p 29
- Clinical Study of Goiter in Pacific Northwest with Especial Reference to State of Heart N W Jones, D B Seabrook and F R Menne, Portland Ore—p 41
- \*Cardiovascular Symptomatology in Exophthalmic Goiter J Lerman and J H Means, Boston—p 55
- The Heart in Hyperthyroidism Clinical and Experimental Study E C Andrus, Baltimore—p 66
- Id. Experimental Study F R Menne, R H Keane, R T Henry and N W Jones, Portland Ore—p 75
- \*Cardiac Status After Prolonged Thyrotoxicosis J Marion Read, San Francisco—p 84
- Mixedema Heart Report Based on Study of Seventeen Cases of Mixedema G Fahr Minneapolis—p 91
- Congestive Heart Failure and Hypertrophy in Hyperthyroidism Clinical and Pathologic Study of One Hundred and Seventy Eight Fatal Cases E J Kepler and A R Barnes, Rochester Minn—p 102
- Studies in Thyroid Heart Disease II. Angina Pectoris and Hyperthyroidism M W Lev and W W Hamburger Chicago—p 109
- \*Influence of Thyroid Extract and Hyperthyroidism on Electrocardiogram, with Especial Reference to T Waves J McGuire and Marget Foulger Cincinnati—p 114
- Auricular Fibrillation in Graves Disease P S Barker, Ann Arbor Mich, Anne I Bohning, Chicago, and F N Wilson, Ann Arbor, Mich—p 121
- \*Incidence of Auricular Fibrillations and Results of Quinidine Therapy J P Anderson Cleveland—p 128
- \*Studies in Thyroid Heart Disease. Value of Ergotamine in Hyperthyroidism and Its Effect on Electrocardiogram M W Lev and W W Hamburger Chicago—p 134

**Circulation in Hyperthyroidism.**—Yater states that the changes of the circulation in hyperthyroidism are due mainly to the increase of thyroxine in the myocardium, which causes the heart to beat more rapidly and more vigorously. Associated with this are a general vascular relaxation brought about by the local action of metabolites on the arterioles and capillaries, and an increase in the circulating blood volume, due mainly perhaps to contraction of the spleen. There is probably also an increase in rate and depth of respiration, the result of the effect of an increased hydrogen ion concentration on the respiratory center. These factors aid in the more rapid return of blood to the heart.

**Cardiovascular Symptomatology in Exophthalmic Goiter.**—In an analysis of 184 patients with hyperthyroidism Lerman and Means found that cardiac symptoms are more common in the female; their severity is greater and their duration longer. Cardiac enlargement, precordial thrill and a superficial pericardial friction rub are more common in the female, whereas auricular fibrillation and other forms of arrhythmia are more common in the male. Cardiovascular disease is present in the male and female patients to the same degree. The pulse rate tends to be slower in the male than in the female, while the pulse pressure is higher. It may be inferred therefore that the increased volume flow of blood is about the same in the two groups, although brought about by different mechanisms. Various factors influence the frequency of palpitation and dyspnea and their severity. Twenty-six patients with organic cardiac disease are analyzed by the

authors. It is indicated that hyperthyroidism alone does not produce so-called thyroid heart disease but causes functional derangement in a cardiovascular system already damaged by other pathologic conditions. The authors describe a superficial pleuropericardial friction rub heard over the sternum.

**Cardiac Status After Prolonged Thyrotoxicosis.**—Read presents a clinical study aimed at ascertaining the amount of cardiac damage produced by hyperthyroidism. Since it is generally agreed that the duration of the thyrotoxicosis, rather than its intensity, is the important factor in causing heart impairment, only cases of prolonged thyrotoxicosis are included in the author's study. Twenty patients known to have been toxic for from six months to eleven years were studied by the author. Only one of these was considered a cardiac cripple, and this patient had evidence of circulatory failure antedating the onset of thyrotoxicosis by four years. Two other patients (aged 50 and 55) had hypertension which, from their histories, could not be ascribed to their thyroid disease. There was no correlation between duration (or intensity) of thyrotoxicosis and heart size, blood pressure and so on. The author concludes that when cardiac failure supervened in the course of thyrotoxicosis it was a temporary functional insufficiency resulting from overwork (prolonged tachycardia, increased blood flow, and so on), since there remained no evidence of permanent organic damage and because there was no characteristic pathologic lesion. Thyroid-cardiac disease is seldom, if ever, found in young people, but only in those in the later decades of life who have had their cardiac reserve already encroached on by degenerative cardiovascular changes.

**Thyroid Extract and Hyperthyroidism.**—From the examination of 222 cases of thyrotoxicosis, McGuire and Foulger determined that the T waves in the electrocardiogram of uncomplicated cases of thyrotoxicosis quite frequently are of unusually high voltage and of rolling contour. These changes are not dependent on the pulse rate or on the increased basal metabolic rate and are not specific for thyrotoxicosis, since they are seen also in neurocirculatory asthenia. The administration of thyroid extract to normal persons will produce comparable alterations in the human electrocardiogram. In dogs the administration of large doses of thyroid extract causes tachycardia and increase in the voltage of the T waves. Removal of the stellate ganglions in one animal experiment did not prevent the development of tachycardia under thyroid medication.

**Auricular Fibrillation and Quinidine Therapy.**—On the basis of a study of 426 patients with auricular fibrillation, Anderson states that the presence of auricular fibrillation in patients with hyperthyroidism seems to depend on the duration of symptoms and the severity of the condition. The mortality in such cases has been reduced greatly by the routine use of iodine before operation. Approximately 45 per cent of patients acquire a normal rhythm within four days after thyroidectomy and about 15 per cent more would develop a normal rhythm if allowed to go untreated, but there is no way of knowing which ones they would be. The remaining 40 per cent would continue to have an abnormal rhythm indefinitely if not treated with quinidine. In order to obtain the optimal results with quinidine it must be used from the third to the sixth day following thyroidectomy, and success can be anticipated in from 90 to 96 per cent of the cases. If treatment is delayed longer than this, the percentage of failures increases considerably.

**Value of Ergotamine in Hyperthyroidism.**—Lev and Hamburger gave four patients with hyperthyroidism ergotamine orally or hypodermically. One showed an increased basal metabolic rate after ten days, one a decrease in fourteen days, one a decrease in two days and the fourth patient, in whom compound solution of iodine had been combined with ergotamine, a decrease in eleven days. As a result of their experience they conclude that ergotamine, in the dosage and mode of administration employed, is not as effective as compound solution of iodine in reducing the basal metabolic rate. Neither do they feel that the drug can be called a "cure" for thyrotoxicosis. It contributes to the subjective improvement of the patient, but no more than does the use of compound solution of iodine. The tachycardia of hyperthyroidism is generally favorably influenced by ergotamine. The same drug, when used in two cases of tachycardia not of thyroid origin, failed to produce a slowing of the heart rate. Subcutaneous injection of ergot-



amine in the majority of instances causes a prompt change in the electrocardiogram, consisting of a slowing of the heart rate and an increase in height of the T wave. In two of the six patients it produced a prolongation of the PR interval. It likewise causes in most cases of hyperthyroidism an increase in the systolic and diastolic blood pressure, persisting for at least half an hour after its administration.

### American Journal of Medical Sciences, Philadelphia

184 445 596 (Oct.) 1932

- The Heart in Funnel Chest J Edeiken and C C Wolfert, Philadelphia—p 445
- Gross Cardiac Hypertrophy in Myocardial Infarction E C Bartels and H L Smith Rochester, Minn—p 452
- Spontaneous Rupture of Aorta O Klotz and Winifred Simpson, Toronto, Canada—p 455
- \*Hypotensive Action of Potassium Sulphocyanate in Hypertension R S Palmer, Boston—p 473
- \*Harmful Effects of Nitroglycerin, with Especial Reference to Coronary Thrombosis S H Prodder and D Ayman, Boston—p 480
- Neuroblastoma of Adrenal with Multiple Metastases J Klein, Chicago—p 491
- Hypoglycemia Associated with Tumor of Islands of Langerhans and with Adrenal Insufficiency, Respectively J Rabinovitch and F W Barden St Louis—p 494
- Human Pancreatic Secretion Studied from Case of Pancreatic Cyst with Fistula J Kahn and H M Klein, New York—p 503
- Further Observations on Use of Dextrose in Pneumonia W W G MacLachlan, G J Kastlin and R Lynch Pittsburgh—p 511
- \*Clinical Study of Artificial Hyperthermia Induced by High Frequency Currents F W Bishop, C B Horton and S L Warren, with technical assistance of Emmy Lehman, Rochester, Minn—p 515
- Bacillus Proteus Septicemia with Recovery H V Paryzek and E E Ecker, Cleveland—p 533
- Effect of Exercise on Human Erythrocytes Christianna Smith and Katharine F Kumpf, South Hadley, Mass—p 537
- \*Contact Dermatitis (Venenata) Distribution and Importance of Heloniums as Cause of Contact Dermatitis in United States R M Balyeat, H J Rinkel and T R Stemen, Oklahoma City—p 547
- Relation of Neocinchophen to Question of Cinchophen Toxicity J S Davis, Jr., New York—p 555

**Action of Potassium Thiocyanate in Hypertension—**Thirty-five well controlled patients, most of them showing the effects of continued arterial hypertension, were treated by Palmer with potassium thiocyanate. This drug, when used in sufficient dosage, caused a definite and marked lowering of the arterial blood pressure in 31 per cent of the patients. Toxic effects are skin rashes, gastro-intestinal symptoms and central nervous system symptoms, such as acute apprehension and excitement, which may be severe enough to constitute a toxic psychosis. Weakness may accompany the use of the drug but is probably not a toxic effect and does not necessarily contraindicate its use. Angina pectoris, in those subject to this symptom, may be increased and in some patients may be induced by the use of this drug. Toxic effects are reduced to the minimum by carefully controlled dosage. Limited observation of the use of the drug in combination with a general regimen including rest and diet suggests that it may be of value, though these results may not be referred to in accurately appraising the hypotensive action. The author states that the hypotensive effect is not lasting and that a second or third such effect, after the drug is once discontinued, is more difficult to obtain.

**Harmful Effects of Glyceryl Trinitrate—**Prodder and Ayman administered glyceryl trinitrate in therapeutic doses to 110 patients under direct observation. Alarming toxic reactions were observed in four. In two instances the blood pressure became indeterminate and the pulse could not be palpated. Heart block developed in one of these, and in the other the course of cardiac infarction was thought to be unfavorably influenced. A record was made of the electrocardiographic changes that occurred during the reactions in these two patients. In the other two patients there were, as evidence of toxicity, marked slowing of the pulse rate, great drop in blood pressure, and severe constitutional symptoms. Careful supervision of the patient is advised when the first dose of glyceryl trinitrate is administered in order that those who have an idiosyncrasy to it may be discovered and possible dangerous reactions avoided. A small initial dose from  $\frac{1}{2000}$  to  $\frac{1}{500}$  gram (0.0003 to 0.0002 Gm) is advised. The possible harmful effects of glyceryl trinitrate in coronary thrombosis are reported.

**Hyperthermia Induced by High Frequency Currents—**According to Bishop and his associates, artificial hyperthermia can be carefully and accurately controlled by a rather standardized procedure well within the scope of the average hospital

The whole body temperature is elevated by the passage of high frequency currents through the trunk by means of large block tin electrodes. The temperature is maintained at any desired level below 42 C (107.6 F) for five hours without danger to a patient in ordinary physical condition. This is accomplished by keeping the patient surrounded by air at a temperature sufficiently high to compensate for losses by radiation. The temperature can be lowered at will by cooling the patient's environment, by cold drinks and by a cold enema. The condition of the patient is determined by temperature, pulse and respiration readings taken every ten minutes, by blood pressure determinations at frequent intervals, and by noting the color of the skin. The fluid balance should be maintained. Excitement is avoided by proper sedatives and calmness on the part of the personnel. Treatments have been given to fifty-seven patients in nineteen months, with a mortality of 2 per cent based on 100 treatments, if based on the number of patients, the mortality is 35 per cent. A careful selection of patients should be made until sufficient experience has been acquired to evaluate the possibility of harm to patients in poor condition.

**Contact Dermatitis—**Balyeat and his associates state that Helonium microcephalum D C is an important etiologic factor in contact dermatitis (venenata) in the Southwest. One or more species of the helonium family grow in every state in the Union. The irritating substance is an oleoresin. It is soluble in absolute alcohol, benzene or ether and relatively insoluble in water. Since the characteristic of the genus is an oleoresin, any species should be important from the standpoint of contact dermatitis. Patch tests should be made with great care because a systemic reaction may occur, manifesting itself by abdominal cramps, diarrhea, conjunctivitis and headache. The widespread distribution of the heloniums affords adequate contact for the development of a specific sensitization.

### American Journal of Ophthalmology, St Louis

15 901 1006 (Oct.) 1932

- Eyes of School Children E Jackson, Denver—p 901
- Keroplasty An Historical and Experimental Study, Including a New Method R Castroviejo, New York—p 905
- Light Sense P W Cobb, St Louis—p 917
- Ultraviolet Light in Ophthalmology H R Hildreth, St Louis—p 925
- Transmissive Properties of Tinted Lenses W W Coblenz, Washington, D C—p 932
- Contusion of Eyeball with Delayed Intra Ocular Hemorrhage Report of Three Cases F C Cordes and W D Horner, San Francisco—p 942
- The Fitting of Contact Glasses R von der Heydt, Chicago—p 946
- \*Optic Neuritis and Optic Atrophy Due to Thallium Poisoning Following Prolonged Use of Koremlu Cream Report of Case G H Stine, Colorado Springs, Colo—p 949
- Radiational Cataract J E Lebensohn, Chicago—p 953

**Optic Atrophy Due to Thallium Poisoning—**Stine reviews the literature and presents a case in which polyn neuritis, optic neuritis and optic atrophy developed following the prolonged use of Koremlu depilatory cream which contained 7 per cent thallium acetate. Relief from sensory symptoms and steady improvement in the motor paralysis and visual acuity followed withdrawal of the drug and institution of measures to promote elimination, such as calcium, iodides, sodium thiosulphate and sweating. Ocular complications of thallium poisoning are rare, but clinical and experimental evidence show the distinctly toxic effect of thallium on the eye. Cataract, keratitis, optic neuritis, retrobulbar neuritis and postneuritic optic atrophy may be caused by thallium poisoning.

### American Journal of Physical Therapy, Chicago

9 169 196 (Oct.) 1932

- Present Day Status of Tonsil Electrocoagulation J A Haiman, New York—p 173
- Care of Oily Skin H Goodman, New York—p 176
- Light Therapy in Cures E Bianconi and H Bianconi Paris, France—p 179
- Infra Red or Radiant Heat in Treatment of Rheumatisms H Dausset and Lucie Paris, France—p 184
- Diathermy and Other Electrical Agents in Infantile Paralysis H Bordier Lyons France—p 189

9 197 216 (Nov.) 1932

- Conservatism in Nasal Surgery as Applied to Nasal Mucosa W A Gross Chicago—p 199
- Biterminal Active Electrode Technique for Tonsils H Goodman New York—p 201
- Cutaneous Cancer as Seen by Ophthalmologist and Otolaryngologist D T Atkinson San Antonio Texas—p 203

## American Journal of Public Health, New York

22 1027 1122 (Oct.) 1932

- Participation of Lay People in Promotion of Rural Child Health Program Elma Rood Detroit—p 1027
- H and O Agglutination as Aid to Diagnosis of Typhoid Fever Anna Dean Dulaney, W T Winkle and Ruby Trigg, Memphis Tenn—p 1033
- Significance of Infant Mortality Data in Appraisal of Urban Community A D H Kaplan Denver—p 1037
- \*Effect of Hyperpyrexia Induced by Ultra High Frequency Current on B Typhosus Agglutinin and Complement E E Ecker and M O Neal Cleveland—p 1050
- Observations and Studies on Silicosis by Diatomaceous Silica. R T Legge and Esther Rosencrantz San Francisco—p 1055
- Adult Health Education W H Brown Palo Alto Calif—p 1061
- The Greenburg Smith Impinger Sampling Apparatus for Dusts Fumes Smoke and Gases L Greenburg New Haven, Conn—p 1077

**Hyperpyrexia Induced by Ultra-High Frequency Current.**—Ecker and O'Neal induced hyperpyrexia in nine guinea-pigs and ten rabbits by means of a high frequency electric current. Temperatures of from 40.5 C (104.9 F) to 43.1 C (109.6 F) were obtained. Temperatures of 42 C (107.6 F) or over, if maintained for any length of time, were lethal. The hyperpyrexia so induced depressed, but did not entirely destroy, inoculation agglutinins to B typhosus. The amount of depression was roughly proportional to the length of time of heating and the degree of temperature obtained. The inoculation agglutinins returned to their original titer within twenty-four hours to one week, except in one fatal case in which there was a terminal stimulation beyond the original titer. Complement was usually depressed on the first heating, but on a second heating it was stimulated. In no case was it completely or permanently destroyed. Hyperpyrexia has no permanent effect on inoculation agglutinins. If they are depressed during the time of fever, they soon return to normal.

## Archives of Dermatology and Syphilology, Chicago

26 597 782 (Oct.) 1932

- Considerations of Present Status of Serology of Syphilis. Montevideo Conference of League of Nations Health Committee R L Kahn Ann Arbor Mich—p 597
- \*Histogenesis of Multiple Idiopathic Hemorrhagic Sarcoma of Kaposi J Dorffel Königsberg Germany—p 608
- Keratoderma Palmaris et Plantaris (Keratoderma Punctatum) Report of Case. C F Sims New York—p 635
- Scleroma Report of Case H E Alderson San Francisco—p 639
- \*Onycholysis and Onychomadesis Report of Case of Each with Review of Literature M J Strauss New Haven Conn—p 644
- Turban Tumor or Sweat Gland Carcinoma So-Called Endothelioma of Scalp Report of Case Illustrating Its Epithelial Structure J W Jones H S Alden and E L Bishop Atlanta Ga—p 656
- Tinea Barbae of Upper Lip A M Davidson and Eleanor S Dowding Winnipeg Canada—p 660
- Naevus Sebaceus (Jadassohn) Report of Four Cases S S Robinson Los Angeles—p 663
- Senear Usher Pemphigus A R Woodburne Grand Rapids Mich—p 671
- Iichen Planus of Nails Report of Case F Vero New York—p 677
- \*Keratoderma Blennorrhagicum G V Stryker and A W Ham St Louis—p 684
- Naevus Unilateralis Comedonicus Naevus Follicularis Keratosis of White S E Sweitzer and L H Winer Minneapolis—p 694
- Cutaneous Sensitization to Wool L W Lord Baltimore—p 707
- Fungus Infection of Feet Fumigation of Shoes with Formaldehyde as Means of Treatment Y Henderson New Haven Conn—p 710

**Idiopathic Hemorrhagic Sarcoma.**—On the basis of a study of sixteen cases and corroborative evidence found in the literature Dorffel believes that the sarcoma of Kaposi is a disease of the reticulo-endothelial system, which disease is, *a priori* not a true blastoma but may become one in some cases after long continued irritation. However he hesitates to employ the term 'reticulo endotheliosis' since it does not clearly include all the manifestations of the disease and since it has been used also in designating other diseases, such as mycosis fungoides. The term does not indicate precisely that the third leukocytic system the monocyte system is affected as he has demonstrated in his study. Neither does it suggest the embryonal character of these undifferentiated reticulo-endothelial cells (Herzog). From his observations the author concludes that (1) the vascular system throughout the body is the site of definite clinical changes such as ectasia, varicosities and purpuric lesions (2) nodules may be found distributed along the vessels and adherent to the vessels, (3) microscopically newly formed capillaries and polymorphous cellular infiltrate are found the cells of which arise from the reticulo endothelial system (lymphocytoid cells), (4) the mono-

cytic system is affected, as evidenced by an increased number of monocytes in the tissues and monocytosis in the differential blood smear, and (5) the presence of lattice fibers throughout the infiltrate may add further weight to this contention, but present knowledge of lattice fibers does not permit too definite conclusions on this point.

**Onycholysis and Onychomadesis.**—Strauss states that separation of the nails from the nail bed and matrix without previous local pathologic changes is an unusual occurrence. The cases reported in the literature can be separated into two groups: one in which the process begins at the free border of the nails and is usually not complete, the other in which the process apparently begins at the matrix and is usually complete. Various causes have been ascribed to the condition, such as occupational diseases (in laundresses, bottle washers), burns, emotional strain, exposure to lightning, alopecia areata, tabes dorsalis and arsenic poisoning. It seems probable that the pathologic process is one of the nail bed in one case and of the matrix in the other, the abnormality of the nail plate being the only visible evidence of this process. The author reports a case of each group, in which the cause could not be definitely ascertained.

**Keratoderma Blennorrhagicum.**—A case of keratoderma blennorrhagicum is reported by Stryker and Ham in which the cutaneous manifestations began as small pinpoint areas resembling droplets of wax and progressed to typical keratotic lesions, without evident clinical phases of vesiculation or pustulation. The case differed from the usual case in that it was of a long duration, seven years, and that it demonstrated an erythematous eruption chiefly over the joints and extremities in addition to the erythematous eruption around the keratotic lesions. Histologically, the latter showed a subacute type of inflammatory reaction in the corium with an infiltration of lymphocytes, plasma cells, eosinophils and mast cells. The epidermis showed a well marked parakeratosis, together with a marked thickening and edema particularly of the prickle cell layer. The condition was differentiated from psoriasis not only by the clinical observations but also by the subacute nature of the inflammatory reaction, which showed a considerable number of plasma cells with an absence of polymorphonuclear leukocytes and micro-abscesses.

**Fungal Infection of Feet.**—Henderson observed that, when shoes are left for from eight to sixty hours in a closed tin box containing a small dish of formaldehyde, the vapor effects sterilization even at room temperature. Leather absorbs considerable amounts of formaldehyde vapor, which it gives off again for many hours afterward. When shoes so treated during the night are worn during the day, a distinct amelioration or disappearance of infection of the skin may result after a time. Incidentally, the feet are also protected against reinfection from the shoes.

## Archives of Surgery, Chicago

25 615-818 (Oct.) 1932

- Process of Tendon Repair Experimental Study of Tendon Suture and Tendon Graft M L Mason and C G Shearon Chicago—p 615
- Traumatic Shock S O Freedlander and C H Lenhart Cleveland—p 693
- \*Peritonitis II Synergism of Bacteria Commonly Found in Peritoneal Exudates F L Meleney J Olpp H D Harvey and Helen Zaytseff Jern New York—p 709
- Breaking Strength of Healing Fractured Fibulae of Rats IV Observations on High Carbohydrate Diet R M McKeown M K Lindsay S C Harvey and R W Lumsden New Haven Conn—p 722
- \*Etiology of Femoral Hernia L W Tasche Sheboygan, Wis—p 749
- Changes in Wall of Bladder Secondary to Prostatic Obstruction Their Significance in Prostatic Surgery D K Rose St. Louis—p 783
- \*Etiology of Gallstones I Chemical Factors and Role of Gallbladder E Andrews R Schoenheimer and L Hrdina Chicago—p 796
- Forty Eighth Report of Progress in Orthopedic Surgery J G Kubus E F Cave S M Roberts and J S Barr Boston J H Freiberg Cincinnati J E Nilgram New York G Perkins London England and P D Wilson Boston—p 811

**Peritonitis.**—According to Meleney and his associates, the bacteria commonly found in peritoneal exudates, namely, colon bacillus, green streptococcus and Welch's bacillus, have a synergistic action in producing a lethal infection of the peritoneum. They kill in much smaller doses when two or three of the species are combined than when inoculated in pure culture and the Welch bacillus is not more active in this synergistic action than the other two. Smears and cultures of the

peritoneal exudate should be made at the time of operation in cases of peritonitis, in order that there may be a basis for prognosis. If the cultures reveal more than one species of intestinal organism, the prognosis is liable to be worse than if any one organism is found in pure culture. (This does not apply to the primary forms of peritonitis usually due to hemolytic streptococcus or pneumococcus.) Any study of experimental or clinical peritonitis, from a bacteriologic point of view, must take into consideration not only the adjuvant action of one species of intestinal bacteria on the others but the possibility of a toxic substance, formed by the synergism of these bacteria when growing together in mixed cultures, which may not be produced by any one of the species in pure cultures.

**Femoral Hernia**—From a study of the literature Tasche concludes that femoral hernial sacs are never congenital. They are always acquired and are produced by traction and not by pressure. Males have as many femoral peritoneal diverticula as females but, clinically, femoral hernia is found twice as often in women as in men. The lacuna vasorum increases in size in both sexes from fetal life to old age. This enlargement of the lacuna vasorum favors the production of femoral hernia because it allows the force of traction to act to better advantage. The lacuna vasorum is smaller in the female than in the male. Poupart's ligament is shorter in females than in males. There is little, if any, correlation between the size of the lacuna vasorum and the length of Poupart's ligament in adults. In fetal life and early infancy there is a high correlation. The femoral artery increases in caliber from fetal life to old age. The femoral vein increases in caliber up to adult life and then varies according to other factors, such as height and weight. The walls of the femoral artery and vein increase in thickness with age. There is no correlation between the size of the lacuna vasorum and the size of the vessels in adults, during fetal life and early infancy this correlation is good. Extirpation of the hernial sac with adequate closure of the femoral orifice offers the patient the best hope of permanent cure. The available space for the development of a femoral hernia is smaller in the female than in the male, that is, the difference between the sum of the areas of the two femoral vessels, subtracted from the total area of the lacuna vasorum, is greater in males than it is in females.

**Gallstones**—On the basis of their experiments on dogs and a study of the gallbladder contents in twelve cases of cholesterol stones removed at operation, Andrews and his associates conclude that the cholesterol is held in solution in the bile in a series of loose and firm chemical complexes with the bile salts. Most of these complexes may be broken up by relatively slight influences, as, for instance, dialysis. If the bile salts are removed from these complexes or from bile, by any means, cholesterol is precipitated. There is no differential absorption of cholesterol and bile salts by the normal gallbladder. The infected gallbladder absorbs bile salts rapidly but cholesterol slowly, if at all. Therefore, the bile salt-cholesterol ratio is of supreme importance in the precipitation of cholesterol stone-containing gallbladder bile from necropsy material, as reported by Neuman, and is confirmed and extended to fresh operating room material.

### Canadian Public Health Journal, Toronto

23 453 502 (Oct.) 1932

Public Health Nursing as Seen by the Psychiatrist, Private Physician, Jayman and Public Health Nurse W. T. B. Mitchell, Montreal. A. M. Jeffrey and Adelaide M. Plumptre, Toronto and B. E. Harris, Oshawa, Ont.—p. 455

Public Health and Social Welfare H. Emerson New York—p. 470

Prophylaxis in Mental Disease C. A. Baragar, Edmonton Alta—p. 478

\*Antigenic Qualities of Dissociated Strain of *Brucella Abortus* R. Gwatkin Toronto—p. 485

**Brucella Abortus**—According to Gwatkin, a virulent strain of *Brucella abortus* was dissociated by growing on 10 per cent immune serum broth. The R type was more vigorous in growth habits and rather stringy but otherwise similar to the S type, as far as examined. Hydrogen sulphide was produced equally by the two. The R type was spontaneously agglutinated in 0.85 per cent salt solution. It rendered immune serum broth cloudy but was agglutinated and grew at the bottom of the tube in plain broth. The S type gave the opposite results. R remained in suspension fairly well in distilled water and sodium chloride solutions up to 0.4 per cent. As an antigen

in the complement fixation test, R had little or no binding power with R or S serums. It was more anticomplementary than the S type. The anticomplementary action was inhibited in suitable dilutions of antigen by immune and normal serums. The R type was fed to a pregnant guinea-pig. This animal gave birth to normal young and was free from infection when killed. The same dose of S produced abortion and the organism was recovered. Twelve guinea-pigs were injected with one slant of R each and none became infected. The organism was recovered from the apparently normal spleen twenty-one days, but not seventy-six days, after injection. No agglutinins nor complement-fixing bodies were produced against either R or S by any of these animals. The R type was unchanged after seventy-five daily subcultures on liver agar and was still R after thirteen guinea-pig passages. The tenth, eleventh and thirteenth subcultures, while still R serologically, produced acute peritonitis. Suspensions of old cultures were not spontaneously agglutinated in some cases. These suspensions were not agglutinated by immune serum nor did they possess any antigenic value in the complement fixation test. Subcultures from the old ones were spontaneously agglutinated. One liver agar slant of R injected by the intra-abdominal route failed to possess any antigenic value in the complement fixation test. There was no difference between the vaccinated and control groups judged by the criteria of serum titers, lesions, cultures and weights.

### Delaware State Medical Journal, Wilmington

4 219 234 (Oct.) 1932

Statutory Safeguards to Health U. W. Hocker, Lewes—p. 219

Delaware Medicine in Colonial Times P. W. Tomlinson, Wilmington—p. 221

The Delaware White House Conference Public Health Administration Section II A. C. Jost, Dover—p. 224

Social Insurance Impossible to Abolish When Once Established E. H. Ochsner, Chicago—p. 227

### Johns Hopkins Hospital Bulletin, Baltimore

51 185 261 (Oct.) 1932

Mechanism of Anemia in Infancy H. Josephs, Baltimore—p. 185

Necrosis of Spinal Cord Produced by Electrical Injuries O. R. Langworthy, Baltimore—p. 210

Acute Pneumococcal Nephritis S. S. Blackman and G. Rake, Baltimore—p. 217

A Students Bibliography of Internal Medicine Typhoid Fever A. L. Bloomfield, San Francisco—p. 234

### Journal of Nervous and Mental Disease, New York

76 313 424 (Oct.) 1932

Case of Recklinghausen's Disease with Observations on Associated Formation of Tumors J. W. Kernohan and H. L. Parker, Rochester, Minn.—p. 313

\*Masked Thyrotoxicosis Simulating Primary Neurosis S. Ginsburg New York—p. 331

\*Meningitis Caused by Nonhemolytic Streptococcus Report of Case with Recovery K. Rothschild New Brunswick N. J.—p. 360

Role Played by Masturbation in Causation of Mental Disturbances W. Malamud and G. Palmer, Iowa City—p. 366

**Thyrotoxicosis Simulating Primary Neurosis**—Ginsburg reports in detail the case histories of six patients suffering from thyrotoxicosis. From his observations and a review of the literature he states that thyrotoxicosis is a disease that affects persons of all ages. Emotional shock and strain—biologic, social-economic or sexual traumatic—in apparently normal or neuropathic persons may lead to the clinical development of exacerbation of atypical thyrotoxicosis. Marked thyrotoxicosis may exist for many years without any thyroid enlargement or exophthalmos. The constitutional symptoms of thyrotoxicosis resemble closely the manifestations of the neuroses and, in the absence of thyroid enlargement and exophthalmos, have been mistaken for pure neuroses. Many a case of "neurocirculatory asthenia" and nervous indigestion has been proved to be thyrogenous in origin. A depressive psychosis may develop in the course of thyrotoxicosis, not as a mere casual phenomenon but definitely dependent on toxic thyroid products. Such a psychosis has cleared up and failed to recur when the thyrotoxic condition was controlled. When one is confronted by a case of neurosis or depressive psychosis associated with tachycardia, tremor, heat tolerance, excessive sweating, loss in weight, diarrhea with or without abdominal cramps, with or without thyroid enlargement, the possibility

of thyrotoxicosis should be thought of and careful studies made to establish or rule out its presence. The most valuable single corroborative laboratory test, when positive, is the presence of an increased basal metabolic rate. However, one must remember that in atypical or "borderline" cases of thyrotoxicosis the basal metabolic rate may be only slightly raised or normal. In doubtful cases the iodine therapeutic diagnostic test—marked amelioration or aggravation of symptoms after iodine medication—may help to decide the presence of thyrotoxicosis. Similarly, the radium therapeutic diagnostic test is of great value in atypical or borderline cases to differentiate between thyrotoxicosis and pure neurosis. Marked clinical improvement following radium application over the thyroid speaks in favor of an underlying thyrotoxicosis. The radium therapeutic diagnostic test properly carried out by an experienced radium therapist is a safe and dependable method to yield the desired information without subjecting the patient to the dangers of operation and its frequent sequelae—myxedema—in these borderline cases.

#### Meningitis Caused by Nonhemolytic Streptococcus —

In a case of meningitis with complete recovery, observed by Rothschild, repeated spinal fluid examinations showed non-hemolytic streptococcus in pure culture. The blood count never went below 3,890,000. The hemoglobin was never less than 80 per cent. The differential count showed 93 per cent polymorphonuclears and 7 per cent lymphocytes at the beginning of the disease and 72 per cent polymorphonuclears and 28 per cent lymphocytes at the time of discharge. The treatment consisted of repeated spinal punctures, on the average of two a day, and intravenous injections of 500 cc. of a 5 per cent solution of dextrose twice a day. The latter treatment was started early in the disease in order to keep up the alkali reserve of the patient and to prevent a negative water balance. Before the micro-organism was identified, the patient was given an intraspinal injection of antimeningococcus serum which caused his temperature to rise to 107.8 F and weakened him considerably. The cause of the disease was never definitely established. On physical examination the author could not find any focus except one infected tooth, which was removed after recovery. The author believes that the removal of a focus at the time of the height of a general infection is a dangerous procedure in that a great number of micro-organisms will be thrown into the blood stream. When there is a skin lesion, or any lesions in which one might get easy drainage without doing harm to the surrounding structures and thus spread the infection an immediate attack on the focus is advisable.

#### Journal of Thoracic Surgery, St. Louis

2 1114 (Oct.) 1932

- \*Special Considerations Relating to Surgical Closure of Large Upper Lobe Tuberculous Cavities J. Alexander Ann Arbor Mich.—p. 1
- \*Mechanism of Development of Tuberculous Pneumonia Following Thoracoplasty H. A. McCordock and H. Ballou St. Louis—p. 24
- Dangers and Complications of Oleothorax Report of Cases. J. N. Hayes Saranac Lake N. Y.—p. 34
- Experimental Fixation of Mediastinum M. Berck St. Louis—p. 44
- Left Congenital Diaphragmatic Hernia in Baby of Thirteen Days Operated on Successfully P. N. Coryllos and A. Tow New York.—p. 56
- Effect of Pulmonary Artery Ligation on Healing Time of Experimental Pyogenic Lung Abscesses in Dogs W. M. Tuttle and G. L. Nicoll Chicago—p. 60
- Effects of Complete Occlusion of Thoracic Aorta Experimental Study A. Blalock Nashville Tenn.—p. 69
- Mediastinotomy for Experiments on Heart and Lungs in Dog C. F. Horine Baltimore—p. 77
- Distribution of Pulmonary and Bronchial Circulation Experimental Study C. F. Horine and C. G. Warner, Baltimore—p. 80
- Metastatic Carcinoma of Heart Secondary to Primary Carcinoma of Lung C. H. Mead Minneapolis—p. 87
- Description of Thoracoplasty Brace W. Woodruff, Saranac Lake, N. Y.—p. 99

**Surgical Closure of Tuberculous Cavities**—According to Alexander, nonclosure of large or stiff-walled cavities in the upper third of the lung is the most frequent cause of failure to effect a cure of tuberculosis by artificial pneumothorax or surgical operation. Medium-sized and small cavities with walls that are not exceptionally rigid can usually be closed by induced pneumothorax, phrenicectomy, extrapleural pneumolysis, paravertebral thoracoplasty of little or medium extensiveness, or some combination of these or other less frequently

used measures. Large or stiff-walled cavities usually require for closure extensive posterolateral thoracoplasty, which for safety should be performed in three or more stages. The author describes a special simple maneuver for gaining wide and easy access to the upper ribs, including the first. He discusses the value of posture, shot bags, an effective elastic brace and preliminary parasternal chondrectomy in increasing the chance of complete closure of a cavity after thoracoplasty. Incomplete closure of a cavity by a posterolateral thoracoplasty can usually be made complete by employing anterolateral thoracoplasty, secondary posterolateral thoracoplasty or extrapleural pneumolysis with paraffin, pectoral muscles or rubber bag filling. The author describes a simple technic for an anterolateral thoracoplasty that removes the upper cartilages and ribs, including the first, to the sternum and sometimes including part of the sternum. Indications for anterolateral thoracoplasty to supplement extensive posterolateral thoracoplasty are relatively infrequent. Among approximately 100 patients who have had posterior thoracoplasty, the combined operation was performed on fourteen patients with large or unusually stiff-walled cavities. The cavities apparently became completely closed in ten, small but not closed in three, and one patient died.

#### Tuberculous Pneumonia Following Thoracoplasty —

McCordock and Ballou believe that many of the so-called pneumonias and edemas that develop following thoracoplasty in cases of pulmonary tuberculosis are of a tuberculous nature. That these tuberculous lesions are not the result of a hematogenous dissemination can be readily shown by the absence of tubercles in other organs. Perhaps the fact that some patients recover from these induced tuberculous pneumonias is due to the relative paucity of tubercle bacilli in these lesions. This view is supported by the experiments of Austrian and Willis, who have shown that the presence of dead or disintegrated bacteria and their products may result in a tuberculin reaction which can, of course, resolve completely or proceed to the formation of hard tubercles. One might ask why tuberculous pneumonia develops following the operation, when lesions fail to develop in the good lung before the operation despite the presence of tubercle bacilli-laden sputum which must bathe the tracheobronchial tree. The authors believe that the past work of Rich and McCordock supplies a possible answer, they have shown that the important consideration is the number of tubercle bacilli that reach the alveoli. Patients subjected to thoracoplasty are all potentially sensitized persons, and the compression therapy merely acts as an inoculating mechanism which leads to the sudden discharge of relatively large quantities of tubercle bacilli or their products into the alveoli of uninvolved lung tissue. This would suggest that preoperative prophylactic measures of a suitable kind might prevent the occurrence of a secondary tuberculous pneumonia in the previously nonaffected lung, or at least lessen its frequency.

**Metastatic Carcinoma of Heart**—From a review of the literature and the necropsy statistics of ten series of cases, Mead concludes that primary or secondary carcinoma of the heart is extremely rare. Metastasis to the heart is more common than primary cardiac neoplasm. Carcinomatous metastases to the heart may occur from practically all organs of the body in which malignant diseases are found. Carcinoma of the lungs is the most common source of carcinoma of the heart. Metastatic carcinoma of the heart is almost always associated with pulmonary metastases. In all probability, metastases to the heart are blood borne. Peripheral metastases from carcinoma of the lungs, in all probability, pass most frequently through the pulmonary veins, left atrium, left ventricle and aorta. Metastatic carcinomatous thrombosis of the heart with resulting carcinomatous embolic phenomena is rare. There are no pathognomonic signs of carcinoma of the heart. Clinical diagnosis of carcinoma of the heart is rarely, if ever, made.

#### Maine Medical Journal, Portland

23 199 216 (Oct.) 1932

- Diagnosis of Premature Separation of Normally Implanted Placenta S. R. Webber Calais—p. 200
- Modern Tendencies in Infant Feeding E. T. Wyman Boston.—p. 204
- Simple Laboratory Tests for Practitioner S. H. Proger Boston.—p. 207
- Social Insurance Impossible to Abolish When Once Established E. H. Ochsner Chicago—p. 212

**Medical Bull of Veterans' Adm, Washington, D C**

9 119 227 (Oct) 1932

- Can We Prevent Cancer? G E Pfahler—p 119  
 Statistical Study of One Thousand Two Hundred and Fifty Autopsies in Veterans' Administration Hospitals L E Nolan—p 124  
 Serum Reactions Their Classification, Diagnosis and Management L H Crip—p 142  
 Spinal Anesthesia G C Kirk and R D Green—p 147  
 Recording of Manometric Pressures in Artificial Pneumothorax H P Bacon—p 151  
 Bilateral Pneumothorax in Treatment of Far Advanced Pulmonary Tuberculosis T A Wayland—p 154  
 Suggestions for Standardization of Technic and Terminology in Roentgen Ray Work S B McFarland—p 157  
 Insulin Inactivity W O Manion—p 160  
 Study of Delusions in Schizophrenia and General Paresis C Lewis—p 162  
 Following Patient Through Neuropsychiatric Receiving Ward H O Witten—p 166  
 Medical Administration in Regional Office. W F Dager—p 171  
 Are We Overhospitalizing Our Pulmonary Tuberculosis Patients? W L Carman—p 176  
 Method for Renovating Deteriorated Potassium Iodide J H Baker—p 180

**New England Journal of Medicine, Boston**

207 685 724 (Oct 20) 1932

- \*Common and Hepatic Duct Stones F H Lahey, Boston—p 685  
 \*Hinton Test in Diagnosis and Treatment of Syphilis in Penal Institution Helen M Wiestling, Framingham, Mass, and A Berk, Boston—p 690  
 Bernardo Ramazzini 1633 1714 F D Donoghue, Boston—p. 695  
 Progress in Psychiatry for 1931 R M Bowman, Boston—p 701

207 725 766 (Oct 27) 1932

- Remarks on Medical Economics F H Lahey, Boston—p 725  
 Acute Nondiphtheritic Laryngeal Obstruction Report of Fifty One Cases Treated at Hartford Isolation Hospital During Past Six Years C L Thenebe Hartford Conn—p 740  
 Medical Progress Gastro Intestinal Surgery in 1931 M A McIver, Cooperstown, N Y—p 743

**Common and Hepatic Duct Stones**—From the observation of 1,306 cases of biliary tract disease, at the Lahey Clinic, Lahey states that common and hepatic duct stones tend to occur in patients who have had stones and infection within the gallbladder for a long time. In 39 per cent of the cases in which he has found common and hepatic duct stones at operation there has been no associated jaundice. Common duct stones, particularly at the ampulla of Vater, can exist in the entire absence of any certain evidence of their presence, even that of palpation. The mortality of operations for gallstones when there are stones in the common and hepatic duct is distinctly higher (13.3 per cent) than when there are stones only in the gallbladder (4 per cent). The indications for opening and exploring the common duct which the author employs are stated. A considerable part of the mortality of the late gallstone operations is associated with dilatation and infection of the biliary tract and diminished function of the liver. When gallstones are present, the diagnosis should be made early. Patients should not be permitted to pass through several attacks of gallstone colic. Earlier operations for gallstones will result in lower mortality rates and better end-results.

**Hinton Test in Diagnosis of Syphilis**—Wiestling and Berk state that, in the penal institutions of Massachusetts, the Wassermann test is the one officially used as an aid in the diagnosis and management of syphilis. In November, 1929, the Hinton test was instituted in addition to the Wassermann test, as a means of serologic diagnosis. During the succeeding eighteen months, 389 women were examined of whom 139, or 35.7 per cent, showed positive reactions at one time or another, or gave a history of syphilis or presented clinical signs or symptoms of the disease. Both Wassermann and Hinton tests were done on the same specimen of blood. From the comparison of the results obtained, the authors conclude that the Hinton test was positive in more than twice as many cases of syphilis as the Wassermann and therefore is a distinct aid in the diagnosis of syphilis. In treated cases the Hinton reaction remained positive longer than the Wassermann, indicating as far as they could determine, continuation of treatment and therefore better management. They believe that a negative Hinton reaction may be considered a diagnostic aid in ruling out active syphilis of the central nervous system whenever suspicious signs are encountered.

**New Jersey Medical Society Journal, Orange**

29 733 810 (Oct) 1932

- Random Thoughts on Medical Economics L Emerson, Orange—p 733  
 Gas Bacillus Bacteremia Following Abortion R A Kilduffe and D B Allman, Atlantic City—p 742  
 Functional Indigestion W B Stewart, Atlantic City—p 743  
 \*Management of Peptic Ulcer T K Lewis Camden—p 747  
 Recent Advances in Surgery G Blackburne Newark—p 751  
 Industrial Eye Injuries and Compensation Claims Arising Therefrom E S Sherman, Newark—p 761  
 Lenticulus Posterior E J Marsh Paterson—p 769  
 Mesenchymoma W Klein, New Brunswick—p 774  
 \*Vaginal Diphtheria Review of Literature to Date and Report of Case. L A Eigen, West Orange—p 778

**Management of Peptic Ulcer**—Lewis believes that the points of greatest importance in the management of peptic ulcer are (1) desirability of having control of the case in the hands of the family physician, (2) necessity for complete and conscientious cooperation by the patients, (3) importance of the vegetative nervous system in the peptic ulcer complex, and necessity for elimination of all mentally and emotionally disturbing elements from the patient's life (4) routine control and management over a period of not less than two years, and (5) surgery, which at present is chiefly of value in affording a means of meeting certain emergencies.

**Vaginal Diphtheria**—Eigen reports a case of vaginal diphtheria in which Klebs-Loeffler bacilli were recovered from the patient's blood nine days prior to death and were found in some of the internal organs at necropsy. A review of the literature on diphtheric vaginitis revealed certain interesting facts. Tabulation and analysis of the statistics obtained as a result of this review led the author to the following conclusions: 1 Vaginal diphtheria is uncommon. It occurs more often in adults than in children, it is rare in virginal adults, occurring most frequently in those women who have recently been delivered. 2 It is often secondary to clinical diphtheria elsewhere but may be, and frequently is, primary in the vagina. 3 The prognosis in adults is slightly better than in children. 4 Diphtheroids and Klebs-Loeffler bacilli are apparently normal inhabitants of the vagina in many cases. 5 In every case of vaginal discharge, if a definite diagnosis of gonorrhea cannot be made, diphtheria should be ruled out before the condition is labeled "nonspecific" vaginitis. 6 A definite diagnosis of diphtheria cannot be made without bacteriologic studies and, often, virulence tests are necessary. 7 In cases of vaginal diphtheria, the urine, and perhaps the feces, may act as prolific sources of infection. The excreta in these cases should be disinfected as in cases of typhoid. The urine and feces may wash off and mix with the diphtheritic membrane and exudate and thus may really contain quite a number of virulent Klebs-Loeffler bacilli. The author concludes that diphtheritic vaginitis may occur at any age, the youngest patient reported was 5 months of age and died of heart failure due to toxemia. The oldest patient was a woman, aged 55. She also died. The duration of the disease varies from one to four weeks, as a rule, but may continue for as long as five months.

**Oklahoma State Medical Assn Journal, Muskogee**

25 411 460 (Oct) 1932

- Reactions and Results Obtained from Specific Vaccine Therapy in Chronic Infectious Arthritis E Goldfain Oklahoma City—p 411  
 \*Low Back Injuries, with Particular Reference to Part Played by Congenital Abnormalities F D Dickson, Kansas City, Mo—p 415  
 \*Arthritis F E Dill Oklahoma City—p 423  
 Rheumatoid H C Graham, Tulsa—p 427  
 Health Department and the Physician in Private Practice C E Waller Washington D C—p 430  
 Occipitoposterior Position D Lowry Oklahoma City—p 433  
 Agranulocytic Angina Report of Five Cases J C McDonald Oklahoma City—p 437  
 New Concepts of Liver Function Report of Case of Primary Carcinoma of Gallbladder I MacKenzie Tulsa—p 441  
 New Field of Activity in Medical Practice C Puckett, Oklahoma City—p 445

**Low Back Injuries**—Dickson calls attention to the fact that congenital abnormalities of the lumbosacral articulation occur in approximately 35 per cent of all individuals, producing a structurally weak back. Clear roentgenograms taken in the proper manner will reveal the presence of congenital abnormalities, if carefully studied. When subjected to trauma the normal spine should and usually does recover under adequate treatment. When subjected to trauma the congenitally weak back returns to normal much more slowly and much less com-



pletely than does the normal spine. With a definite congenital defect present, if adequate conservative treatment does not result in relief and elimination of the disability, stabilization of the involved region is definitely indicated. In the author's clinic in 242 cases he has advised operation in 233 per cent of the lumbosacral cases and has actually operated in 133 per cent, with only two failures so far as he can determine. Operations have been performed in 118 of those cases in his series diagnosed as sacro-iliac, with no failures.

**Arthritis**—Dill states that chronic illness is one of the greatest causes of poverty. Arthritis and rheumatic conditions certainly are a major part of chronic diseases and as such should be comparable with tuberculosis and cancer as problems of this generation. He discusses atrophic, hypertrophic, infectious, gonorrheal and tuberculous arthritis and gives the average symptoms in their diagnosis. The author also discusses drugs, vaccine therapy, physical therapy, surgery and diet in the treatment of arthritis. The author uses salicylates in acute conditions, in chronic cases associated with pain or during the time of acute exacerbations, arsenic in the hypertrophic type of arthritis, iron in secondary anemia and after acute symptoms have subsided, glandular extracts for hypertrophic arthritis, menopausal arthritis or lowered metabolism, and calcium, intravenously, in a tuberculous condition. He employs foreign protein therapy in the hypertrophic and infectious arthropathies and in those in which chronicity is marked, and stock vaccines, when no demonstrable foci are present or when the preparation of autogenous vaccines is impossible. The author uses physical therapy, such as massage, in the atrophic type of arthritis, radiant heat, in well nourished patients, in the hypertrophic or metabolic type, diathermy in acute arthritis and fibrositis, ultraviolet and infra-red rays in primary or secondary anemia, and the needle spray, to increase the blood supply, in the form of the common shower. He corrects deformities as soon as possible, drains the joint proper if pus collects, as it does in the gonorrheal type of arthritis, and gives autotransfusions in the polyarthritic and subacute conditions. The author gives the main requisites of Snyder's arthritic diet.

on the nature of the underlying cause. It is an unscientific and faulty clinical practice to treat diarrhea other than as a symptom of organic disease until every effort to find the cause is exhausted. In diarrhea due to allergy, the foods at fault can often be found by careful skin testing or by placing the patient on an elimination diet. Diarrhea due to faulty diet can be relieved by the addition of the necessary protein, carbohydrate or fat and by adding to this an abundance of food rich in vitamins and minerals. Amebiasis yields to specific treatment. The number of specific drugs in use permits wide choice and frequent change to meet the requirements of the individual case. In bacillary dysentery the treatment must be directed toward the patient's comfort as well as toward a check of the disease. Opiates in large doses to control pain and tenesmus, daily irrigation of the colon with a weak potassium permanganate solution and polyvalent antidiysenteric serum to relieve symptoms are used by the author. The diet should be entirely liquid during the acute stage. Intravenous dextrose and saline solution by hypodermoclysis should be given daily. *Balantidium coli* infection is relatively rare and may be prevented by avoidance of contact with the excreta of swine. The treatment consists of acetarsone by mouth and irrigation of the colon with a 1:1,000 solution of quinine. For diarrhea caused by intestinal tuberculosis, the treatment is directed toward the checking of the general tuberculous process, rest, heliotherapy and a high caloric diet. In diarrhea due to carcinoma of the colon, the patient should be referred to the surgeon for treatment. In diarrhea of unexplained etiology, the treatment should be symptomatic while the search for the cause is continued.

#### West Virginia Medical Journal, Charleston

28 433-484 (Oct.) 1932

Plea for Perineal Versus Other Excisions in Rectosigmoidal Cancer  
S. G. Gant, New York—p. 433  
Alleviating Pain and Shortening Labor  
W. W. Point, Charleston—p. 439

\*Treatment of Thyroid Intoxication  
M. R. Reid, Cincinnati—p. 452  
Social Insurance Impossible to Abolish When Once Established  
E. H. Ochsner, Chicago—p. 471

**Treatment of Thyroid Intoxication**—According to Reid, thyroid intoxication is a metabolic disease involving the whole organism. It is especially related to disturbances of the other endocrine glands and the sympathetic, parasympathetic and somatic nervous systems. In thyroid intoxication which requires operative treatment, iodine should never be used except during the preoperative and postoperative management. In a certain percentage of the toxic nodular goiters, the response will be harmful. In cases of exophthalmic goiter, radical resection of the thyroid is the therapy of choice. All nodules in the thyroid are potentially dangerous and, if persistent after the age of 25, should be resected. Clinically there is a vast difference between thyrotoxicosis due to diffuse changes and that due to nodular changes. Operating on pubescent and adolescent goiters is rarely indicated unless the disease becomes a clear cut case of exophthalmic goiter. Operating in cases of neurocirculatory asthenia and cardiac "effort syndrome" brings only discredit on the procedure of thyroidectomy. The basal metabolic rate should not be regarded as a certain index of thyroid intoxication. It has a positive but not a negative value. In some cases of "burned out" diffuse goiters and many cases of nodular goiters there may be serious cardiovascular disability when the basal metabolic rates are normal or subnormal. All cases of cardiac disability associated with nodular goiters, "toxic" or "nontoxic," should be subjected to a thyroidectomy. If thyroid intoxication occurs during pregnancy, the hyperthyroidism should be treated without considering the pregnancy. The mortality of thyroid surgery should be less than 1 per cent. Dissatisfaction with thyroid surgery is not due to the mortality rate but to poor judgment with respect to the selection of cases and to the amount and condition of the gland left. The reduction in size of diffuse glands due to the involutional changes brought on by the use of iodine makes it necessary to do more radical resections than heretofore in order to allow for the increased size and activity following the discontinuance of the use of iodine. The author describes and illustrates his operative technique, which is the typical procedure for an exophthalmic gland. He outlines the routine preoperative and postoperative treatment of patients.

#### Tennessee State Medical Assn Journal, Nashville

25 383-430 (Oct.) 1932

Value of Various Common Immunizing Agents  
H. G. Bradley, Nashville—p. 383

Comparative Study of Certain Xanthine Diuretics: Preliminary Report  
Theophylline, Calcium Salicylate and Theobromine, Calcium Salicylate  
A. R. Bliss, Jr. and R. W. Morrison, Memphis—p. 387

General Use of Radiation Therapy  
W. R. Bethea and H. D. Gray, Memphis—p. 402

Migraine, with Especial Reference to Certain Modifications  
W. H. Witt, Nashville—p. 409

\*Diarrhea: Troublesome Symptom  
L. C. Sanders, Memphis—p. 414

**General Use of Roentgen Therapy**—Bethea and Gray demonstrate the general use of radiation therapy by a review of twelve years' experience in 2,902 cases. They report the results and from them conclude that many malignant conditions treated early may be arrested. Late malignant conditions are made more comfortable in most instances and life may be prolonged from a few months to several years. Benign tumors that are sensitive to irradiation respond readily. Brain and cord tumors may be arrested and life prolonged for several years. Tuberculous adenitis and peritonitis respond well. They do not recommend roentgen therapy in pulmonary tuberculosis. Most skin conditions respond well when allergy is excluded. Uncomplicated glandular conditions and conditions of the uterus respond well. Chronic conditions should be carefully selected as many do not respond to irradiation. Fungal conditions respond readily when treated early. Whooping cough is benefited more than any other condition in the respiratory group. Many acute conditions respond rapidly to irradiation. Blood dyscrasias are improved but not cured by irradiation and life is prolonged in cases treated early. The more recent use of higher voltage is producing better results.

**Diarrhea**—Sanders divides the etiology of diarrhea into allergic, dietetic, parasitic, neurogenic, systemic and gastrointestinal groups. He discusses each group separately. He concludes that the normal stool is solid or semisolid. Several watery stools daily are the result of some functional disturbance of the gastrointestinal tract. The treatment depends



## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Journal of Physical Medicine, London

7 133 152 (Nov.) 1932

- Chronic Rheumatic Joint Disease in General Practice Part II Treatment P. Ellman—p. 135  
 Vitamin D Potency of Egg Yolk from Irradiated Hens G. H. Maughan and Edna Maughan—p. 137  
 Treatment of Prostatitis by High Potential Currents O. Parkes—p. 138  
 Diathermy Test to Establish Proof of Death H. Bordier—p. 140  
 Recent Developments in Production of Hyperexia B. D. H. Watters—p. 141  
 Nature, Properties and Uses of Infra Red and Luminous Rays A. Furniss—p. 143

## British Medical Journal, London

2 781 822 (Oct. 29) 1932

- History of Physiology in Great Britain During Last Hundred Years E. Sharpey Schafer—p. 781  
 Ocular Manifestations of Lesions of Fifth Cranial Nerve R. F. Moore—p. 783  
 Id. C. M. H. Howell—p. 786  
 Intravenous Urography in Children C. G. Teall—p. 788  
 Case of Syphilis (Gummata) of Heart G. T. Burke and H. Stott—p. 789  
 Principles and Methods of Malaria Control in Assam G. C. Ramsay and J. de la M. Savage—p. 790

2 823 864 (Nov. 5) 1932

- Disorders of Sympathetic Nervous System and Their Response to Medical and Surgical Treatment E. Bramwell—p. 823  
 \*Radiographic Investigation of Lumbar and Sciatic Pain J. F. Brailsford—p. 827  
 Infective Eczemas of Scalp G. B. Dowling—p. 830  
 Chronic Appendicitis in Shanghai H. R. Friedlander, with note on roentgen examination by J. E. Bowen—p. 832  
 Unusual Case of Meningitis Associated with Hematuria L. Margaret Masterman—p. 834  
 Congenital Absence of Head of Femur A. Brownlee—p. 835

**Lumbar and Sciatic Pain**—Brailsford states that, in the investigation of cases of lumbar and sciatic pain, anteroposterior and lateral roentgenograms of the lumbar and sacral spine, pelvis and hip joints should always be made. These may give an immediate clue to the cause of the symptoms. Congenital or developmental irregularities occur in a large percentage of cases and should not be ascribed as the cause of the symptoms until all other possible lesions have been excluded. In cases of injury to the back or pelvis, roentgenograms should be taken as soon as possible after the injury, and note made of any old as well as recent injury and the films kept for reference. Changes indicative of injury may be shown on the roentgenograms taken subsequently which were not present on the first roentgenograms. Acute lumbar and sciatic pain is most frequently associated with toxemia from some focus of septic absorption such as the teeth, colon, genito-urinary system, appendix, gallbladder and sinuses. Roentgenograms will often help in the discovery of such a focus. Roentgenograms of the teeth will show evidence of chronic septic absorption, though local symptoms and clinical signs may be absent. The essential feature of the radiologist's report on the teeth is that it is independent and unbiased. Paget's disease of bone and secondary deposits of malignant diseases may be discovered in the preliminary roentgenologic examination before there is any clinical evidence that such conditions exist.

## Edinburgh Medical Journal

39 657 696 (Nov.) 1932

- Some Medical Heroes of Seventeenth, Eighteenth and Nineteenth Centuries J. H. Ferguson—p. 657  
 Peripheral Neuritis J. Collier—p. 672  
 \*Some Points in Investigation, Prognosis and Treatment of Tubal Conditions, with Especial Reference to Insufflation and Roentgen Ray Examination After Injection with Lipiodol E. F. Murray—p. 137

**Treatment of Tubal Conditions**—Murray believes that the operative treatment of cases of sterility implies also the use of the insufflation test. Sealed tubes in cases of sterility must be further investigated by roentgen examination after the injection of iodized poppy-seed oil to determine the site of the blockage and the possibility of its relief by operation. The operation of salpingostomy is aided by the simultaneous use of the insufflator, without such proof of patency at the time of operation it is a purely speculative procedure. The injection

of iodized poppy-seed oil is invaluable in the diagnosis, prognosis and treatment (where patency is proved) of inflammatory conditions of the fallopian tubes.

## Glasgow Medical Journal

37 289 359 (Nov.) 1932

- \*Cervical Ribs G. H. Edington—p. 289  
 Diabetes in Childhood I. Etiology, Diagnosis and Prognosis G. B. Fleming—p. 314  
 Id. II. Treatment N. Morris—p. 321  
 Id. III. Coma F. J. Ford—p. 335  
 Id. IV. Significance of Blood Sugar Curve in Ketosis Mary L. Gilchrist—p. 340

**Cervical Ribs**—From the study of five patients with cervical ribs, which he reports, and a review of the anatomic and clinical literature Edington draws the following conclusions: 1 The presence of cervical ribs in the living person is suggested by a symptom complex, or syndrome, which, while not actually pathognomonic, is sufficiently characteristic to excite the suspicions of the clinician. 2 The syndrome comprises, usually, sensory nerve disturbance in and impaired power of one limb. In some of the cases vascular troubles leading, it may be, to a certain amount of gangrene are also present. 3 The nerve symptoms result from pressure or friction of the nerves of the lowest trunk of the brachial plexus against bone, or the fibrous band extending forward from the rib extremity, vascular troubles are almost certainly due to pressure on or irritation of sympathetic fibers in the lowest trunk of the plexus and not to direct action of the rib on the subclavian artery. 4 Roentgenologic investigation should be employed in all cases and should include enumeration of cervical vertebrae. 5 Should roentgenologic observations be negative as regards cervical ribs, the first thoracic rib, whether rudimentary or of normal form, should be suspected as the cause of the symptoms. 6 If symptoms are present, resection of the rib concerned should be performed and may be expected to be followed by cure. 7 Predisposition to and the occurrence of cervical ribs is explained by the natural peculiarity of ossification of the seventh cervical transverse process. 8 It is not definitely certain what, if any, part is played in the actual occurrence of the abnormal ribs by the position of the brachial plexus, viz, prefixed or postfixed.

## Journal of Hygiene, London

32 465 624 (Oct.) 1932

- Investigation into Effect of Certain Factors on Child Health and Child Weight G. C. M. McGonigle and P. L. McKinlay—p. 465  
 Rabid Antibody Content of Rabbit Immune Serum as Index of Acquired Resistance to Rabies Infection G. Stuart and K. S. Krikorian—p. 489  
 \*Comparative Bactericidal Action of Normal Serum, "Whole" Blood and Serum Leukocyte Mixtures, with Further Observations on Bactericidal Mechanism of Normal Serum T. J. Mackie, M. H. Finkelstein and C. E. van Rooyen—p. 494  
 Granular "O" Agglutination in Paratyphoid B and Typhoid Fevers A. D. Gardner and Edith F. Stubington—p. 516  
 \*Qualitative or Quantitative Methods in Serologic Diagnosis of Enteric Infections? E. S. Horgan—p. 523  
 Utilization of Citrates and Fermentation of Cellulose by Strains of Bacterium Coli Isolated from Human Feces C. E. Skinner and H. G. Brudney—p. 529  
 Relation of Composition of Culture Medium to Formation of Endospores by Aerobic Bacilli H. L. A. Tarr—p. 535  
 Simple Blood Tellurite Medium for Isolation of C. Diphtheriae E. S. Horgan and A. Marshall—p. 544  
 Spermicidal Powers of Chemical Contraceptives V. Comparison of Human Sperms with Those of Guinea Pig J. R. Baker—p. 550  
 Cancer Susceptibility in Relation to Color of Mice C. C. Twort and J. M. Twort—p. 557  
 Bacterial Purification of Gasworks Liquors Action of Liquors on Bacterial Flora of Sewage F. C. Happold and A. Key—p. 573  
 Epidemiology of Whooping Cough in London P. Stocks, assisted by Mary N. Karn—p. 581

**Bactericidal Action of Normal Serum and "Whole" Blood**—According to Mackie and his associates, normal "whole" blood and serum leukocyte mixtures may exert a bactericidal effect when the serum (or plasma) is inactive in this respect and may possess quantitatively greater bactericidal properties than serum (or plasma) when the latter is active alone, but such effects are relatively weak. Leukocyte suspensions may exhibit an initial bactericidal action on certain bacteria, but this is usually weak and is followed by a pronounced growth promoting influence on the surviving organisms. Under certain conditions normal "whole" blood and serum leukocyte mixtures are inferior to serum (or plasma) in bactericidal

power This is observed when the serum (or plasma) is strongly active alone and is due not merely to an inhibition of the bactericidal action of the leukocytes but also to a lessened effect of the serum bactericidins The comparative bactericidal power of normal "whole" blood or serum leukocyte mixtures on the one hand and serum or plasma on the other depends on the activity of the serum, when this is relatively weak, blood shows an enhanced action, when strong, blood is less active The authors' observations apply to a wide variety of bacteria irrespectively of biologic species Bacterial extracts possess marked inhibitory properties on the bactericidal action of serum (or plasma) but not to any extent on the bactericidal properties of the leukocytes, as evidenced by the approximately equal influence of such extracts on whole blood and serum, respectively Dead bacteria in certain numbers produce inhibition of the bactericidal action of serum (or plasma) but exert a greater inhibitory influence on the reaction of "whole" blood The authors tentatively suggest that when the serum is strongly bactericidal the killed organisms, on being phagocytized along with living bacteria, interfere with the intracellular destruction of the latter, which at the same time are protected from the serum bactericidins They also give data regarding the time of maximum bactericidal action by serum toward various organisms and the occurrence of growth promoting action following an initial bactericidal effect.

**Serologic Diagnosis of Enteric Infections**—Horgan observed that "normal" agglutinins for *Bacillus typhosis* and *B. paratyphosus B* appear to be conclusively of the O type Such agglutinins appear to be of consistently low titers and are absent in many serums Normal agglutinins for *B. paratyphosus A* have not been encountered O agglutinins are readily produced by inoculation of a TAB vaccine and may rise to as high titers as those encountered during an enteric infection It is impossible to fix any limit for residual O agglutinins in inoculated persons The author confirms the value of examining for O agglutinins in enteric cases and points out some fallacies of a purely qualitative method In conclusion he emphasizes the especial importance of accurate quantitative Widal reactions in the diagnosis of fevers in the tropics for the following reasons 1 The common practice of TAB inoculation, e g, government officials, immigrants in quarantine, and so on 2 The difficulty of obtaining any reliable history from natives as to whether they have been inoculated and, if so, the time that has elapsed since inoculation 3 The common occurrence of various obscure types of pyrexia simulating enteric infections in both normal and inoculated persons As such cases are frequently outside the range of full laboratory facilities, the Widal reaction assumes proportionately greater importance in arriving at a diagnosis A quantitative technic using both types of antigens (H and O) for each organism and carrying out agglutination to end-titer is alone capable of giving such assistance

### Journal of Tropical Medicine and Hygiene, London

35 305 320 (Oct. 15) 1932

- Mosquito-Borne Diseases in Southern Nigeria III Differences in Periodicity of Various Mosquitoes. D Anderson—p 305  
Studies in Blackwater Fever P Brahmachari R Banerjee and U Brahmachari—p 309  
Malaria in Zululand P H A. Spencer—p 310

### Lancet, London

2 877 928 (Oct. 22) 1932

- The Debt of Preventive Medicine to Harvey and the College of Physicians G Newman—p 877  
Biologic Types of Diphtheria Bacillus and Their Clinical Significance Helen A Wright and A L K. Rankin—p 884  
Hemorrhagic Disease of the New Born Study of Twenty Eight Cases N B Capon—p 887  
Tropical Ulcer as Deficiency Disease Treatment with Injections of Calcium L J A. Loewenthal—p 889  
Hypertrophic Pyloric Stenosis in Adults M Coleman—p 892  
Malignant Diphtheria Treatment with Glucose and Insulin. H E. de C. Woodcock—p 894

**Tropical Ulcer as Deficiency Disease**—Loewenthal states that tropical ulcer is one of the great causes of death and disability among African natives There is little evidence in favor of a bacterial cause, whereas its etiology from the dietary point of view deserves consideration Treated by daily intravenous injections of calcium chloride, the great majority of patients showed rapid healing The authors daily intra-

venous injection is 15 grains (1 Gm) of calcium chloride in 10 cc of distilled water For children, from 5 to 7 grains (0.32 to 0.45 Gm) is injected intravenously, according to age Local treatment consists of eusol dressings twice daily only The first few injections usually cause almost immediately a disagreeable feeling in the mouth and at the site of the ulcer This is by no means a disadvantage among native patients, who consider it a sign of the efficacy of the remedy This treatment constitutes a definite advance, in that it is superior to all others both therapeutically and economically This treatment has been given in approximately 500 cases of tropical ulcer The author analyzes sixty-nine personally observed cases

### Medical Journal of Australia, Sydney

2 557 588 (Nov 5) 1932

- Angina Pectoris as Allergic Manifestation, and Other Observations on the Allergic State and Its Treatment D W C Jones—p 557  
Relations Between Weight of Breast Fed Infants, Their Order of Birth and the Yield and Composition of Their Mothers' Milk H S H Wardlaw and E E P Dart.—p 564

### South African Medical Journal, Cape Town

6: 615 646 (Oct 8) 1932

- Relationship of the Native to South Africa's Health P W Laidler—p 617  
High Blood Pressure in General Practice A Raff—p 628  
Induction of Premature Labor A W Burton—p 631  
Injuries of Elbow in Children G J M Melle—p 634

### Tubercle, London

14: 1 48 (Oct) 1932

- Further Note on Treatment of Tuberculosis with Turtle Vaccine W C Fowler—p 1  
Atelectasis Detelectasis and Apneumotosis E Fletcher—p 3  
Bronchial Length Changes and Other Movements C C Macklin—p 16

### Chinese Medical Journal, Shanghai

46 965 1070 (Oct) 1932

- Treatment of Spastic Colitis by Ephedrine A Roentgenologic Study Y C Soo and S H Zia—p 965  
\**Garcinia Mangoustana* in Treatment of Amebic Dysentery M Garnett and S D Sturton.—p 969  
Addison's Disease in a Chinese Case. J L H Paterson—p 974  
Sarcosporidiosis in Man Report of Case in a Chinese. Lan Chou Feng—p 976  
Uterotubal Pregnancy A. C Siddall—p 982  
Spontaneous Pneumothorax in the New Born Kha Tí Lim—p 986  
\*Cryptogenic Splenomegaly (Banti's Disease) Review and Report of Cases from North China J F McIntosh—p 992  
Presidential Address Way Sung New—p 1025

**Treatment of Amebic Dysentery**—According to Garnett and Sturton, the prices of drugs ordinarily used in the treatment of amebic dysentery render it desirable that a cheaper method be found for the benefit of poor patients *Garcinia mangoustana* has long been used empirically in Indian and Malayan indigenous medicine for the treatment of diarrhea and dysentery A tincture can be made from the dried husk of *Garcinia mangoustana* This tincture, if exhibited in conjunction with emetine treatment, appears to act in some way as a useful adjuvant and to cut short acute attacks of amebic dysentery Smaller doses of emetine are required if mangosteen is given simultaneously The authors cannot state, pending further investigation, whether mangosteen has any action other than the known astringent action of some of its constituents

**Cryptogenic Splenomegaly**—McIntosh reviews the literature and history of the disease and presents an analysis of the records of fifty-three cases of cryptogenic splenomegaly From these data he makes an attempt to reconstruct the picture of the onset and course of the disease The disease seems to be identical with splenomegalies that occur in Algeria, Formosa, South China and the Philippines It is probable that the chronic splenomegalic anemia, or Banti's disease, of Europe and America is the same disease, or that the occidental group contains at least some cases of this type There are marked differences, as well as marked similarities, between the splenomegaly group and a corresponding group of primary cirrhosis of the liver Separation of these two diseases seems justified, although the evidence does not support the assumption that their causes are distinct The symptoms of the disease may be classified as primary and secondary It is the latter group that is relieved by splenectomy

**Archivio Italiano di Chirurgia, Bologna**

32 557 660 (Oct.) 1932

- Behavior of Pathogenic and Nonpathogenic Anaerobic Micro Organisms in Peritoneal Cavity G Zampri and B Galavotti —p 557  
 Tuberculosis of Male Breast G Gullotta —p 605  
 Cardiospasm, Dysphagia and Enlarged Esophagus Esophageal Sympathectomy J F Recalde —p 613  
 Pyelographic Examination in Chronic Simple Pyelitis F Virgilio —p 635  
 \*Cholecystoduodenal Anastomosis with Tubes of Absorbable Metal P Pannella —p 645

**Cholecystoduodenal Anastomosis with Tubes of Absorbable Metal**—In experiments on dogs Pannella has resected the common bile duct between two ligatures, created an anastomosis between the gallbladder and the duodenum by means of a magnesium tube, encircled by a flap of omentum, and obtained perfect communication through a permanent tube of connective tissue remaining after resorption of the magnesium tube within about twenty days. The operation is performed in a short time and without any serious traumatism. Furthermore, the danger of infection due to the newly formed duct is slight. No pathologic alterations or modifications were observed in the gallbladder, the bile ducts, the liver or the duodenum.

**Policlinico, Rome**

39 1765 1808 (Nov. 14) 1932 Practical Section

- First Case in Italy of Extirpation of Adenoma of Parathyroid in Patient with Generalized Fibrous Cystic Osteitis C Frugoni and R Alessandri —p 1765  
 \*New Method of Enrichment for Research of Tubercle Bacilli C Frigimelica —p 1776

**Tubercle Bacilli**—Frigimelica places a certain amount of sputum in a beaker and shakes it in a few cubic centimeters of water. Enough saturated aqueous solution of trinitrophenol (dissolved by heat and filtered after cooling) is added to impregnate the mixture of sputum, which is stirred by means of a glass rod until the whole mass is thoroughly stained a bright yellow. Ten per cent solution of potassium hydroxide is added drop by drop until the entire mass is macerated and dissolved when slightly heated. A liquid is obtained in which the tubercle bacilli are uniformly distributed. In order to concentrate the bacilli, chloroform to the amount of one third of the total volume is added to the cooled mixture, which is either vigorously shaken or centrifugated for at least ten minutes. A whitish ring forms at the zone of separation between the homogeneous liquid and the chloroform and, in positive cases, is exceptionally rich in tubercle bacilli. In the author's experience, microscopic examination revealed a notable increase in the amount of bacilli as compared with the results of other methods.

**Archiv fur Kinderheilkunde, Stuttgart**

97 1 128 (July 22) 1932

- Causes of Congenital Atresia of Small Intestine F Laessing —p 1  
 Distribution of Sigaud's Structural Types Among Nurslings in East Prussia G Rehfeld —p 11  
 \*Criticism of Indican Test in Urine and Its Technic During Nursling Age E Mayerhofer —p 17  
 Behavior of Micro Meinicke Reaction in Serum of Diphtheria Patients and in Diphtheria Serum L Feuerstein —p 26  
 Fate of Children with Hirschsprung's Disease (Megacolon) K C Chaudhuri —p 29  
 \*Organic Acid Content of Urine in Diphtheria J Csapo —p 53  
 Viscosity Studies in Nursling Age J Suranyi —p 59  
 \*Nongonorrheal Vaginal Leukorrhea During Childhood Leukorrhea with Pseudodiphtheria Bacilli K Paul —p 63  
 Applicability of Electrocardiography in Pediatrics P von Kiss —p 72  
 Changes in Bones in Photo Ergosterol Toxicosis O Gotteche and B Kellner —p 76

**Criticism of Indican Test in Urine**—Mayerhofer points out that thirty years ago it was generally believed that the test for indican in the urine (according to Jaffe or Obermayer) was an entirely reliable proof for the intensity of intestinal putrefaction but his investigations on this problem, reported by him from 1901 to 1913, revealed the following: 1 The qualitative indican reactions of the urine according to Jaffe or Obermayer take into account only one constituent (indole) out of the large number of substances that develop in intestinal putrefaction. This indicates that indicanuria alone is not an entirely reliable symptom for the estimation of intestinal putrefaction. 2 Indole and the many other putrefactive products of the intestine, for instance the important ethylsulphuric acids, may even be in contrast to one another in that in apparently

strong intestinal putrefaction (much ethylsulphuric acid) there may be only a weak or an entirely negative indican reaction, and, on the other hand, in apparently slight intestinal putrefaction (little ethylsulphuric acid) there may be a strong indican reaction. 3 Glycuronic acid is able to bind all basic substances that are formed in intestinal putrefaction and it passes them into the urine in the form of paired glycuronic acids. 4 In adults as well as in older children who receive a mixed diet, the fluctuation of glycuronic acids in the urine is a much too susceptible indicator in the estimation of intestinal putrefaction. 5 There are qualitative glycuronic acid reactions that of Tollens and, in the nitrate-free urine, that of Goldschmiedt. 6 In the nitrate-free urine of nurslings the glycuronic acid reaction of Goldschmiedt is advisable, it is a much more exact indicator of intestinal putrefaction than the indican reaction. 7 The urine of nurslings stands alone in that the indole appears irregularly, late and, as a rule, only in the severer cases of intestinal putrefaction. The author gives as the reason for reviewing these results the fact that reports in the recent literature seem to have overlooked some of the former literature and, although he is gratified that they corroborate his criticism of indicanuria in nurslings, he advises these workers to continue where former investigators left off.

**Organic Acid Content of Urine in Diphtheria**—After calling attention to former investigations on this problem, Csapo states that the object of the studies reported in this paper was to determine (1) the organic acid content of the urine and (2) to what extent these values are influenced by antitoxic serum. He found that during the first few days of pharyngeal diphtheria there is a considerable increase in the elimination of organic acids in spite of administration of antitoxic serum. In diphtheritic laryngitis the organic acid elimination shows the same behavior as in pharyngeal diphtheria. In malignant diphtheria the organic acid content of the urine is likewise increased, but not in the same degree as in simple pharyngeal diphtheria, and in the later degenerative stages of malignant diphtheria the acid elimination is normal. Thus the author's investigations revealed that in the beginning stage of every form of diphtheria the organic acid elimination is increased. He thinks that this metabolic disturbance is due primarily to bacterial toxins. There is no parallelism between the pharyngeal process and the organic acid elimination, but younger children as a rule react to the infection with a milder local process and a more severe metabolic disturbance. The author also found that in several cases of follicular tonsillitis the organic acid elimination was never increased. Thus it seems likely that this simple chemical test may eventually have a diagnostic value, for if a diphtheria bacillus carrier should develop a severe tonsillitis, the clinical as well as the bacteriologic aspects may lead to an erroneous diagnosis. However, aside from such cases, the acid test is in its present form not sufficiently specific for differential diagnostic purposes, because in infections such as pneumonia and scarlet fever the elimination of organic acids is likewise increased.

**Nongonorrheal Vaginal Leukorrhea During Childhood**—Paul first calls attention to the fact that examinations on large numbers of girls have revealed that, although gonorrheal leukorrhea is rare (from 0.1 to 0.3 per cent), nongonorrheal leukorrhea is comparatively frequent; that is, it occurs in from 10 to 20 per cent of girls. He then relates his observations on several girls, in two of whom he observed a vulvar diphtheria with fever and membrane formation. In two others the leukorrhea was not accompanied by fever and membrane formation but culture in Löffler's serum revealed again diphtheria bacilli that by animal experiment were proved to be not true diphtheria bacilli but only pseudodiphtheria bacilli. These observations induced the author to investigate this problem further. Examination of 135 girls with nongonorrheal leukorrhea convinced him that pseudodiphtheria bacilli are present in more than 50 per cent of these cases. He does not maintain that the pseudodiphtheria bacilli are the cause of this form of leukorrhea but he considers them nevertheless an essential factor. He lists the following as the characteristics of this form of leukorrhea: (1) presence of pseudodiphtheria bacilli, (2) acute beginning of the leukorrhea, (3) comparatively rapid disappearance of the acute inflammation, followed by chronic leukorrhea with frequent relapses, (4) refractoriness to therapeutic measures. In approximately one fourth of the examined 135 cases the vaginal secretion was increased, but the vaginal

flora consisted of the normal rod-shaped forms. This form of leukorrhea occurs only during puberty and it is probably an abnormal reaction to a physiologic process. In a third group of children with leukorrhea, various pathogenic organisms were found.

### Archiv für klinische Chirurgie, Berlin

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- Amniotic Origin of Deformities of Extremities H. Hellner—p. 191
- Displacement of Intervertebral Disks and Its Effect G. Schmorl—p. 240
- \*Role of Bacterial Flora in Development and Perforation of Duodenal Ulcers A. J. Schmeil—p. 286
- \*Ewing's Bone Sarcoma J. Borak—p. 301
- Necrosis of Head of Femur After Traumatic Dislocation of Hip Joint O. Dyes—p. 339
- Tertiary Syphilis of the Breast L. B. Josephowitsch—p. 360
- \*Pathologic and Theoretical Considerations on Osteodystrophia Fibrosa (von Recklinghausen) and Its Relation to Tumors of Parathyroid Glands H. Hanke—p. 366

#### Bacterial Flora in Development of Duodenal Ulcers

—In order to evaluate the role of bacteria in the production of duodenal ulcers as well as in their perforation, Schmeil subjected fifty stomachs, resected because of an acute perforation of a duodenal ulcer, to histologic study. To exclude contamination, the resected specimens were at once placed in a 10 per cent solution of formaldehyde. Sections were stained with hematoxylin-eosin and, for the study of bacteria, with Gram-Weigert, Giemsa or Manson blue stain. In all there were 1,500 serial sections. The presence of bacteria was demonstrated in 94 per cent of the stomachs. They were particularly numerous on the surface of the mucosa in the vicinity of the ulcer. Examination of sections taken from other portions of the stomach revealed the existence of identical organisms. The author failed to observe tissue reaction to these bacteria, but he frequently found areas of inflammation in the absence of bacteria. In three stomachs no bacteria were found either in the ulcer or in the stomach wall. The author, therefore, concludes that bacteria do not play an active part in the formation of duodenal ulcers or in their perforations.

**Ewing's Bone Sarcoma**—Borak raises the question of whether so called Ewing's bone sarcoma is a separate and definite entity and subjects to a critical discussion its three supposedly distinguishing characteristics. These are a characteristic histologic picture, a typical roentgenologic appearance and, above all, a remarkable radiosensitivity of the tumor. Histologically considered the tumor is a round-cell sarcoma, according to the author is in no sense different from the round-cell sarcoma of other tissues. In this opinion the author is supported by Borst and other prominent pathologists. Ewing's attempt to prove that the tumor was of endothelial origin was not successful. The author states that the term "endothelioma" was not acceptable to the American commission on bone tumors which preferred to call it "Ewing's tumor." Ewing's idea of the histogenesis of the tumor is based on the finding of dilated capillaries and a starlike arrangement of cells about these capillaries. According to the author there is nothing distinctive about these histologic appearances nor is there any resemblance between these tumors and endotheliomas of bones and other tissues. The extraordinary rapidity of growth, destroying the bone not only in the width but also in the length is characteristic. With regard to the remarkable radiosensitivity of the tumor, the author points out that this is quite characteristic of all rapidly growing functionally undifferentiated tissues. While denying that Ewing's bone sarcoma is a definite entity in itself, the author insists that due credit be given to Ewing for demonstrating that the tumor can be readily recognized in roentgenograms and more or less successfully treated by irradiation.

**Osteodystrophia Fibrosa and Parathyroid Gland Tumors**—Hanke presents a careful histopathologic study of two typical severe cases of osteodystrophia fibrosa or Recklinghausen's disease and speculates on the relationship of tumors of the parathyroid bodies to the bony changes. In both cases the tendency to exaggerated bone deposition on the one hand and to bone replacement by fibrous tissue on the other was much marked. The newly formed fibrous tissue exhibited a marked giant-cell proliferation. Bony changes characteristic for Paget's disease, namely, an irregular mosaic arrangement and periosteal thickening were not observed. In both cases

there were found bilateral tumors of the parathyroid bodies. In one the tumor was found to be an adenoma made up of eosinophil cells, in the other a cuticle cell adenoma. No noteworthy changes were found in any of the other endocrine glands. Calcium metastases were present in both and in one the characteristic, though rare, calcium deposits in the liver. With regard to the relationship of the parathyroid tumors or enlargements to the bony changes, the author feels that, in view of the favorable results obtained with surgical removal, Erdheim's theory that the enlargement is a purely secondary, compensatory phenomenon cannot be accepted without reservations. The newer experimental data, however, make it appear doubtful that the parathyroid enlargement is the sole or the essential factor. Characteristic changes of osteitis fibrosa were produced in a variety of ways. Changes in metabolism appear to play an important part, acidosis in particular. These alterations may provoke hyperfunction or dysfunction of the parathyroid bodies as regulators of calcium metabolism. A compensatory hypertrophy ensues, which, if continued, will exert a deleterious effect on the bony system. This hypothesis makes it possible to understand both successes and failures after surgical removal of parathyroid enlargements. The interrelationship of metabolic changes, bony changes and enlargement or tumor of the parathyroid bodies constitutes a complex problem awaiting further study and elucidation.

### Deutsche Zeitschrift für Chirurgie, Berlin

237 637-790 (Nov. 8) 1932

- \*Local Treatment of Postoperative Pain After Abdominal Operations W. Capelle and E. Fulde—p. 637
- \*Clinical and Experimental Studies of Pain in Upper Part of Abdomen as Well as of Peritoneal Absorption and Secretion L. Duschl—p. 650
- Pronounced Hematuria in Cystic Pyelitis and in Solitary Cyst of Kidney H. J. Lauber—p. 695
- Difference Between Primary and Secondary Skeletal Tuberculosis and Its Value for Differential Diagnosis in Surgical Practice H. Kraske—p. 705

**Treatment of Postoperative Pain in Abdominal Patients**—Capelle and Fulde, in order to allay the postoperative pain with its undesirable effect on respiration, conceived the idea of combating it by means of a continued local anesthesia. Surgeons in the past depended on bandaging the wound and on the use of morphine to attain this effect. Tight bandaging has the effect of splinting, but at the same time of retarding respiratory excursions. The disadvantages of morphine are that it acts through its influence on the higher centers, depressing in particular the center of respiration. The combined effect is to render breathing shallow and to reduce markedly the vital capacity. Roentgenologically, the effect is seen in the abnormally high position of the diaphragm. A direct method affecting the pain locally would therefore seem preferable. The authors placed in dogs three hollow needles parallel to an abdominal incision. The needles were placed respectively subperitoneally, intramuscularly and subcutaneously, and from 5 to 10 cc of a local anesthetic with epinephrine was injected five times a day into each needle. The abdominal incision healed by primary intention at the end of five days. Histologic studies revealed transient mechanical effects on the injected tissues. No areas of necrosis were present. The authors next applied the method in four clinical cases. The solution used was half the previous strength in physiologic solution of sodium chloride to which were added ten drops of epinephrine for every hundred cubic centimeters of the solution. In the course of twenty-four hours, 10 cc was injected five times into each needle. The treatment was continued for five days. No medication of any kind was given. The patients were free from pain and were not conscious of the incision. They breathed freely and coughed without restraint. Their bowels moved without recourse to enemas. The incisions were healed six or seven days after the operation. The observations of the American and English surgeons suggest that the disturbed respiratory mechanism after abdominal operations may lead to massive collapse of the lung and various other pulmonary complications. The authors suggest that their method of continued local anesthesia may solve this problem in a satisfactory manner.

**Pain in Upper Part of Abdomen**—Duschl states on the basis of his experimental studies in dogs and of his clinical observations that origin, kind, intensity and distribution of pain are functions principally of the vegetative nerve centers. He

found that ligation or severing of blood vessels causes considerable pain. Areas in the peritoneal cavity poor in blood supply are less sensitive than areas rich in blood supply. The sensory nerve fibers of the diaphragm correspond to the fifth, sixth, seventh and eighth dorsal segments. Severing of the phrenic nerve did not diminish the sensitiveness of the diaphragm to mechanical trauma or to traction on it. Splanchnic anesthesia does away with the pain consequent on traction on the stomach, liver or the coronary ligament of the liver. Spinal anesthesia involving approximately the fifth and sixth dorsal segments controls the pain of spontaneous gallstone colic or that occasioned by traction on the viscera in the upper part of the abdomen or the diaphragm. Spinal anesthesia below the eighth segment has no such effect. Injection of the phrenic nerve with procaine hydrochloride did not influence the shoulder pain in cholecystitis. The author found that sectioning of both phrenic nerves did not diminish the absorptive power of the peritoneum. Apparently this function is not influenced by its motor innervation. Stimulation of intestinal peristalsis increased the resorptive power of the peritoneum. He likewise found that extensive flushing of the peritoneal cavity with suitable solutions favors the excretion of considerable amounts of crystalline substances, particularly of nitrogenous substances as well as of bile pigments from the blood of icteric animals. The substances could be demonstrated in the return fluid. The author concludes that in grave icteric states due particularly to liver insufficiency the method of flushing the peritoneal cavity is of therapeutic value.

238 1 128 (Nov. 22) 1932

- \*Pneumoroentgenograms of the Knee Joint H. Schum —p. 1
- Surgery of Foreign Bodies in Gastrointestinal Canal A. Schlegel —p. 57
- Development of Peptic Ulcer in Meckel's Diverticulum G. Schaaff —p. 78
- \*Clinical and Experimental Studies of Development of Collateral Circulation in Occlusion of Inferior Vena Cava W. Brackertz —p. 88
- Differential Diagnosis of Vague Knee Disturbances with Contribution to Serology of Gonorrheal Diseases H. Nagell and G. Gerlach —p. 104
- \*Echinococcus Cyst of Common Bile Duct W. Schaack —p. 109
- Contribution to Subject of Carcinoma of Jejunum W. Porzelt —p. 115
- Interilio Abdominal Amputation of Lower Extremity S. I. Riswasch —p. 121

**Pneumoroentgenograms of the Knee Joint**—Schum has not observed any untoward effect in 114 injections of air into the knee joint in 98 patients. He emphasizes particularly the absence of pulmonary or cerebral emboli. He advises that injections be made slowly, the average amount for an adult being from 100 to 120 cc of air. The author was not particularly impressed with the therapeutic effect of air injection on the morbid process. This occurred only occasionally, chiefly in nontraumatic, chronically inflamed joints, in which it possibly prevented adhesions due to interposition of fragments. The method was found to be most valuable in the diagnosis of injuries to the menisci. While the direct signs of a tear were only rarely demonstrable contrary to anticipations, certain secondary signs made it possible to diagnose the lesion in practically every case. Roentgen diagnosis was correct in 88.7 per cent of the fifty-seven cases in which an operation was performed because of the suspicion of a tear of a meniscus. Diffuse outline of the air bubble and still more its prolongation between the meniscus and the articular surface of the tibia is diagnostic of a tear in the lateral cartilage. Even more diagnostic of a cartilage tear is the shadow on the inner side of the joint, because here no shadow is to be seen between the cartilage and tibia in normal cases. Use of the method revealed many more lateral tears than were formerly believed to occur.

**Development of Collateral Circulation**—Brackertz reports two cases of occlusion of the inferior vena cava in its lower third. In the first case occlusion was caused by the extension of a thrombus from the femoral vein. The second case presented at operation a rare anomaly, namely, a congenital absence of the lower third of the inferior vena cava and a simultaneous absence of the posterior cardinal veins. The author presents a discussion of the etiology and the symptomatology of occlusion of the vena cava inferior on the basis of the two cases described, his experimental work and a review of the literature. The vein may be occluded by a thrombus, it may be invaded by a tumor, or it may be compressed from without by a tumor, by chronically inflamed lymph nodes of the root of the mesentery, or by a tuberculous abscess. A few

instances of congenital lack of development similar to the author's case have been reported. Among the first signs observed is that of edema of the lower extremities. This is followed, after some time, by the development of signs of compensatory collateral circulation. The author points out the interesting fact that, while most cases exhibit edema of the lower extremities and an enlargement of the superficial veins of the abdominal wall, there is a group in which edema is the only sign present. In still another group, in addition to the edema and the dilated superficial veins of the thighs and the abdominal wall, there exist signs of congestion in the intra-abdominal viscera. Clinical cases and animal experiments indicate that occlusion of the inferior vena cava in its middle third, that is, from above the junction of the renal veins up to the entry into it of the hepatic vein, is almost always fatal, death being caused by renal insufficiency. Ligation or occlusion in the upper third is always fatal. The author emphasizes the fact that occlusion of the vena cava inferior below the renal veins is a relatively harmless procedure. The vein has been in occasional cases, torn and therefore ligated in the course of a nephrectomy without producing untoward results. Compensatory collateral circulation develops either through anastomoses of the superficial veins, the inferior epigastric, the superior epigastric and internal mammary vein, establishing a collateral circulation between the inferior and superior venae cavae, or by means of the deeper veins, the posterior lumbar and the azygos veins. In the latter case no dilatation of the superficial veins of the abdomen will be present. The author's animal experiments suggest that the question of development of a superficial or of a deep collateral circulation depends on the level at which the vein is ligated in its lower third. Prognosis here depends on the original disease, the level of occlusion, and the rapidity with which the occlusion is accomplished. The slower the process of occlusion, the greater is the chance for the development of a compensatory collateral circulation.

**Echinococcus Cyst of Common Bile Duct**—Schaack reports the case of a man on whom he operated for obstructive jaundice, presumably caused by a stone in the common bile duct. Visualization of the duct proved difficult because of numerous inflammatory adhesions but was made possible by mobilization of the duodenum. When the thickened and dilated common duct was incised, there escaped a number of echinococcus cysts. These were scooped out with a spoon, the remaining cavity was sponged out with solution of formaldehyde, a drain was inserted and the duct was sutured about it. The duct was patent in both directions. There was apparently no invasion of the liver by the parasite. The author states that primary localization of the parasite in the bile duct is very unusual. The collected cases of Heinatz contain thirty-seven such cases up to 1928. Of these, twenty-five were reported by Russian authors principally of the transcaucasian region. The clinical picture is usually that of an obstructive jaundice. The prognosis is serious, a timely operation offering the best chance for a cure.

### Klinische Wochenschrift, Berlin

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- Pigment of Urine and Its Composition M. Weiss —p. 1817
- Action on Sugar Metabolism by Resorption from Rectum J. Bauer and J. Monguio —p. 1820
- Metabolism During Disturbances of Glycogen Storage H. Beumer and A. Loeschke —p. 1824
- Spleen and Female Genital Apparatus E. W. Winter —p. 1824
- \*Relations Between Allergic Inflammation and Tuberculous Infection A. Klopstock, W. Pagel and A. Guggenheim —p. 1826
- \*Value of Hofmann Flössner's Method of Thrombocyte Count E. Hartmann —p. 1828
- Further Investigations on Thorium Storage K. Ehrhardt —p. 1830
- Paleness of Nails During Energetic Stretching of Fingers E. Hoffmann —p. 1833
- Determination of Blood Alcohol in Accidents Caused by Intoxication R. Goldbahn —p. 1834
- \*Diagnosis, Etiology and Treatment of Dysbasia Angiospastica (Intermittent Claudication) T. Zlocisti —p. 1836
- Isolation from Organ Extracts of Substance Influencing Circulation K. Felix and A. von Putzer-Reyberg —p. 1838
- Elimination of Prolan in Urine of Aged Women B. Zondek —p. 1839
- Central Blood Sugar Regulation Influence of Various Pharmaceutical Preparations on Alimentary Hyperglycemia F. Högl —p. 1839
- Clinic of 'Glandular Fever' H. Lehnendorff —p. 1840
- Use of Blood Group Test in Forensic Medicine A. Hellwig —p. 1843

**Allergic Inflammation and Tuberculous Infection**—Klopstock and his associates investigated the significance of the allergic local reaction for the resistance to superinfection.



The sensitized guinea-pigs against a chemospecific hapten, that is, against a diazotized atoxyl, then produced an anaphylactic local reaction, and at the site of this reaction introduced tubercle bacilli. On the basis of their observations they conclude that the local allergic inflammation as such is of no significance for the resistance to the secondary infection but that the specific alteration produced by the primary infection is responsible for the resistance to the superinfection.

#### Hofmann-Flossner's Method of Thrombocyte Count.

—After evaluating the difficulties that are encountered in the thrombocyte count and after mentioning a number of investigators who have studied this problem, Hartmann criticizes the Hofmann-Flossner method. The thrombocyte numbers detected with this method are several times as large as those detected with other methods, namely, 760 thousand in normal persons. More than half of this number is accounted for by the small forms that are almost never perceptible in the smear. The dancing movements of these forms, their lack of tendency to sedimentation and the impossibility of staining them convinced the author that these forms are not thrombocytes but that they may be either impurities in the solution used in the Hofmann-Flossner method or degeneration products of the thrombocytes and erythrocytes. The correctness of the Hofmann-Flossner thrombocyte count is also contradicted by the observation that in disturbances in which a reduced number of thrombocytes should be expected the Hofmann-Flossner method indicates hardly any difference from the normal.

**Dysbasia Angiospastica.**—Zlocisti differentiates two types in the syndrome of dysbasia angiospastica (intermittent claudication). Type A usually develops in the sixth decade of life and shows predominance of arteriosclerotic impairment of the vascular walls of the leg and foot. Type B develops in the fourth decade and, perhaps as the result of an inferior vascular supply, the spastic factor predominates. This type B can be influenced by a circulatory hormone that is produced in the pancreas. The author describes a simple method by which information can be obtained about the circulatory condition of the legs and by means of which dysbasia can be differentiated from other difficulties in walking, particularly those produced by flatfoot. The test consists in successive immersion of the feet in hot and cold water. In the case of normal circulation the feet become red following immersion into hot water, but if cold water is then applied they become pale for an instant and after that they turn pinkish. In persons with intermittent claudication of the B type (in the arteriosclerotic type A there is no reactivity to hot and cold) the feet become dark cyanotic following immersion into hot water and red if cold water is applied immediately after that. The author explains the mechanism of this test and states that it can be employed also to determine objectively the efficacy of a treatment, particularly of the hormonal treatment.

11 1857 1896 (Nov. 5) 1932

- Fundamental Problems of Energy Economy. H. Heller.—p. 1857  
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Central Blood Sugar Regulation. Action of Cerebral Narcotics on Blood Sugar. F. Höpfer.—p. 1879  
Arabian Biography of Avicenna. P. Kraus.—p. 1880

**Symptoms of Disturbances in Mesencephalohypophyseal System.**—According to Schmidt, the opinion gains more and more support that the hypophysis, particularly its posterior lobe is anatomically as well as functionally connected with the hypothalamic centers of metabolism and that disorders such as diabetes insipidus and adiposogenital dystrophy are not so much disorders of the hypophysis only but rather disturbances of the hypophyseal mesencephalic system. Only for acromegaly can the underlying anatomic changes be detected in the hypophysis, namely in the anterior lobe. The author then discusses the changes in shape, size and body weight of patients with

acromegaly. He points out that acromegaly as a rule develops only in structural types that appear somewhat predisposed and thinks that in tall and narrow types the development of acromegaly is not likely. He states that enlargement of hands and feet may develop also in myxedema, but the two conditions can be differentiated in that the hands of a patient with acromegaly generally perspire considerably, whereas in myxedema the hands are dry. In regard to the behavior of the body weight he states that in acromegaly there may be an initial increase and later a sudden decrease. Diabetes insipidus as a rule leads to a loss of weight, but there are also cases in which, in spite of severe diuresis, there is no loss of weight. In adiposogenital dystrophy as well as in tumors near the hypophysis there may be a considerable increase in weight. The author further discusses the changes in the genital sphere, polyuria and polydipsia, other nervous disorders, sensibility disturbances, reflex anomalies, motor phenomena, disturbances in the sense organs, pain phenomena, particularly headaches and painfulness of joints and bones, and disturbances in the epidermoid organs, skin, hair and teeth. In discussing changes in the gastro-intestinal tract in mesencephalohypophyseal disorders he calls attention to the dryness of the tongue and the frequency of constipation. The temperatures of patients with acromegaly frequently are low, and they complain of feeling cold. The blood pressure seems to be rather low in most patients with mesencephalic hypophyseal disorders. The hormonal content of the blood is difficult to determine because of the many different hypophyseal hormones. The urine frequently contains large amounts of sugar, particularly in patients with acromegaly. The frequency of thyroidal disturbances is especially noteworthy among the complications with other disorders. The author gives special rules for the proper evaluation of the roentgenologic changes in the sella turcica and discusses the treatment. He points out that operative treatment has been successfully tried in acromegaly but that roentgen or radium treatments may likewise prove helpful. In regard to diabetes insipidus, he states that a salt-free diet is of no value but that purgatives may be useful on account of the constipation and because they divert the water elimination to the intestine. Diversion of the water elimination to the skin and prevention of thirst may be effected by hot air baths. The author directs attention to the antidiuretic action of pituitary extract and states that roentgen irradiations of the hypophysis have been reported helpful in diabetes insipidus. Lessening of the cerebral pressure by means of puncture of the corpus callosum counteracted the diabetes insipidus in a patient with hypophyseal dwarfism.

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\*Method of Simultaneous Counting and Differentiation of Leukocytes in Counting Chamber. M. Gutstein.—p. 1534  
Diseases of Optic Nerve. K. Vogelsang.—p. 1535

#### Simultaneous Count and Differentiation of Leukocytes

—Gutstein employs for the differentiation of leukocytes a dye solution containing new blue and rhoduline violet, in the ratio of 2 to 1, dissolved in distilled water. After explaining why he employs these basic dyes rather than acid eosin, he describes the technic of his examination of the blood as follows. Blood is mixed in the proportion of 1 to 11 with the dye solution and then well shaken. During this procedure the erythrocytes are hemolyzed. After from three to five minutes the suspension can be put into the counting chamber and the leukocytes can be counted and then differentiated. The eosinophils can be recognized by the bluish black granules that form a vivid contrast with the bright red nucleus. The neutrophils show a colorless, finely granulated protoplasm and red nuclei. In contradistinction to the fixed preparation stained with the Giemsa stain, the nuclei in this method of staining appear as two, three or five vesicular formations, each of which may contain a nucleolus. The lymphocytes have a round, red nucleus



and a more or less wide rim of protoplasm that may appear unstained or somewhat reddish or may contain reddish granules. As a rule a nucleolus is also recognizable. The monocytes can be recognized by their characteristic nucleus, and particularly by the red protoplasm. The mast cells show large, violet red granules and a red or red violet nucleus. The thrombocytes are gray bluish and, because of their small size, can be readily differentiated from other types of cells. Differentiation of the rodlike nuclear cells as a subdivision of the neutrophils is not possible, but they can be classified according to the number of nuclei.

28 1553 1590 (Nov. 4) 1932

- Various Effects of Bilirubin I and Bilirubin II on Organism in General L. Aschoff —p. 1553  
 \*Encephalitis Following Chickenpox, Smallpox, Vaccination and Measles T. Lucksch —p. 1554  
 Acute Poisoning with Potassium Permanganate E. Hoke and R. Wächter —p. 1558  
 Use of Roentgenographic Observations in Obliteration Therapy of Varicose Veins R. Kantor and W. Löwenfeld —p. 1558  
 Fracture of Base of Skull with Subsequent Suppurative Late Meningitis Operative Cure K. Andrassy —p. 1560  
 Histamine Iontophoresis and Its Therapeutic Significance E. Rosenbluth Ronald —p. 1561  
 \*Disinfection of Diphtheria Bacillus Carriers by Means of Methyl Violet A. Meyer —p. 1563  
 Validity of Bernstein's Formula for Heredity of Blood Groups W. Fischer —p. 1563

**Encephalitis**—Lucksch shows that the similar or identical histopathologic changes in the various forms of encephalitis developing after chickenpox, smallpox, vaccination or measles indicate that all these forms belong to one and the same group. He attempts to show that, on the basis of older as well as more recent observations on virus diseases, the assumption of a second virus is unnecessary for the development of nervous complications following these diseases. He reaches the conclusion that the development of the nervous sequelae is probably related to the steadily increasing predisposition to disease of the central nervous organs.

**Disinfection of Diphtheria Bacillus Carriers**—After reviewing some of the methods formerly recommended for the disinfection of diphtheria carriers and after pointing out some of their shortcomings, Meyer describes his own method. He applies a 3 per cent alcoholic solution of methyl violet by means of a cotton compress to the tonsils and to the nasal mucous membrane. This solution not only spreads rapidly over the surface but also enters the folds and crypts. The only disadvantage of the solution is that it stains. The applications are made from two to three times weekly and sterilization is obtained generally after seven or eight days and at the latest after seven weeks. The disinfection is considered complete after three smears (taken at intervals of eight days) have proved to be free from bacilli. The procedure was effective in nineteen out of twenty carriers. In spite of this comparatively small material the author considers his method worthy of further trial, because of the high percentage of efficacy and because it is simple, does not involve dangers and can be carried out without great expense.

### Munchener medizinische Wochenschrift, Munich

79 1785 1824 (Nov. 4) 1932

- Diagnosis and Therapy of Sciatica H. Curschmann —p. 1785  
 Progress in Diagnosis and Treatment of Most Important Intoxications E. Jeschke —p. 1786  
 Two Epidemics Caused by Food Poisoning W. Rimpau —p. 1791  
 \*Behavior of Blood Platelets in Normal Persons and in Patient with Tuberculosis C. Oestreich —p. 1794  
 \*Experimental and Clinical Investigations on Oral Treatment of Diabetes with Insulin Like Substances from Plants H. O. Hartleb —p. 1795  
 What is Fact in Nutritional Theory of Excess of Bases? W. H. Jansen —p. 1798  
 Indications for Hospitalization of Children in Present Economic Crisis E. Burghard —p. 1799  
 Cerebral Syphilis Following Symptom Free Interval of Forty Eight Years R. Ginzberg —p. 1801  
 Cutaneous Carcinoma That for Two Years Was Considered as Varicose Nodule C. Ling —p. 1803

**The Number of Blood Platelets**—Oestreich points out that the functions of the blood platelets are not as yet fully understood but that recent studies seem to indicate that in addition to their function in the coagulation of blood, they also play a part in the defense of the organism against microorganisms. For this reason it appears advisable to determine

the number of platelets in all diseases in which immunity processes play a part. Studies on blood platelets are difficult because there is as yet no uniformity in the opinions on the normal number of platelets, but the large numbers detected by some of the recent methods are now recognized as erroneous, even by those who first described them (Lampert). The author employed one of the so-called direct methods in which the platelets are counted in the counting chamber following thinning of the blood with a thrombocyte conserving agent. He found the thrombocyte number of normal persons to be from 100,000 to 350,000, the smaller numbers being present in older persons. In active tuberculosis the platelets are as a rule considerably increased, but in the severest cases and also before death there may be a decrease in the platelets, which is probably the result of toxic inhibition of the function of the bone marrow, and this decrease sometimes concurs with leukopenia and anemia. After recovery from tuberculosis the thrombocyte numbers generally become rapidly normal. The author thinks that the thrombocyte number can be employed in the estimation of immunity conditions in a patient only when considered together with other factors, such as the blood picture and blood sedimentation.

**Treatment of Diabetes with Substances from Plants**—Hartleb reviews the former investigations with vegetable substances resembling insulin. He then describes his own investigations on the efficacy of an orally administered fluid extract from the almost ripe pods and stalks of *Phaseolus vulgaris* (kidney bean). He found that in persons without diabetes the extract influences neither the blood sugar curve during fasting nor the alimentary blood sugar curve in the course of a tolerance test. Tests on eight patients with a mild form of diabetes revealed that the blood sugar curve during fasting was reduced in four of them but the alimentary hyperglycemia was influenced in two cases only. Toxic effects of the extract were never observed, even when ten times the therapeutic dose was given. Of ten patients with a mild, a medium severe or a severe form of diabetes treated with the extract, only three patients with a mild form showed an improvement of the carbohydrate metabolism. The author concludes that the extract can be tried in the treatment of mild forms of diabetes but that a favorable effect can be expected in only some of the patients.

### Zeitschrift für das experimentelle Medizin, Berlin

84 587 833 (Oct. 18) 1932 Partial Index

- \*Role of Streptococci in Infectious Arthritis A. Fischer and G. Wehrsig —p. 659  
 \*Influence of Anterior Lobe of Hypophysis on Blood Sugar Content F. Böhm —p. 689  
 \*Physiologic Number and Morphology of Blood Platelets W. Preisner —p. 810  
 \*Relations of Calcium Metabolism to Pneumonia C. E. Schuntermann —p. 824

**Streptococci in Infectious Arthritis**—Fischer and Wehrsig state that the bacteriologic examination of the blood and of articular punctates of patients with chronic infectious arthritis or with acute polyarthritis gives negative results and that the serum of these patients is free from specific agglutinins against streptococci. Moreover, cutaneous vaccination with culture filtrates or with vaccines from streptococci does not give positive reactions in infectious arthritis, and complement fixing antibodies against streptococci are not demonstrable in inactivated serums of patients with arthritis. In the so-called foci of infection (tonsils, dental granuloma), streptococci are regularly demonstrable in patients with arthritis as well as in controls, and in the culture these streptococci show the same characteristics whether they come from patients with arthritis or from healthy persons. In reexamining Rosenow's procedure for the demonstration of elective localization, the authors were able to corroborate certain details of the method but not the theory of elective localization, at least not in regard to diseases of the heart and joints. A large percentage of inoculated animals developed arthritis, no matter whether the inoculated material came from patients with arthritis or from healthy control persons. A hemolytic streptococcus proved especially arthrotropic but could be demonstrated also in the foci of normal persons. The animal experiment proved that active immunization does not influence streptococcal infection. The authors think that the lack of direct demonstrability of streptococci in the blood and in the articular punctates speaks against the causal significance of streptococci, the more so

since in other septic conditions, such as endocarditis lenta, the pathogenic organisms are frequently demonstrable in the blood

**Influence of Anterior Lobe of Hypophysis on Blood Sugar Content**—Tests on rabbits convinced Bohm that the intravenous injection of 100 units of prolan produces a hyperglycemia. The intramuscular injection is less effective, and the subcutaneous administration of the same quantity has no effect whatever. The hyperglycemia produced by prolan reaches its maximum from twenty to fifty minutes after the injection and is still present after ninety minutes, but it can be suppressed by ergotamine. The injection of prolan also reduces the hypoglycemia produced by insulin. Glycosuria follows the administration of prolan only if the blood sugar content increases above 300 mg per hundred cubic centimeters. Tests to determine the origin of the blood sugar following the injection of prolan revealed that injection of prolan is not followed by hyperglycemia if the liver is entirely free from glycogen. These observations indicate the possibility of an involvement of the anterior lobe of the hypophysis in metabolic regulation.

**Physiologic Number and Morphology of Blood Platelets**—Preiss classifies the many methods that have been recommended for the determination of the number of thrombocytes into two groups, the first group including all those that indicate the number of platelets as being between 130,000 and 300,000, and the second group including all those that give the number of platelets at approximately 700,000. He points out that, if the rapidity of disintegration of thrombocytes is taken into consideration, it appears reasonable that the greatest numbers would be the more correct ones. The great difference in numbers is accounted for mainly by the small platelets, which, in the methods revealing the large numbers, amount to more than 50 per cent of the total. But the author shows that even in the second group of tests not all sources of errors have been eliminated and so he devised a new technic. Tests with this method convinced him that only the large and medium large blood platelets can be considered a physiologic constituent of the blood. He thinks that all other forms are disintegration products and he considers 350,000 as the normal number of platelets.

**Relations of Calcium Metabolism to Pneumonia**—Schuntermann points out that the excitability of the muscles, of the sympathetic nervous system and of the terminations of the cerebrospinal motor nerves is largely dependent on the ionic milieu. Reduction of the calcium ions increases the irritability and because of the motor unrest and irritability of patients with lobar pneumonia, the author investigated the calcium content of the blood of patients with lobar pneumonia. In order to be able to evaluate the results of the tests it was necessary to determine first the ratio between the pharmacodynamic calcium and the total calcium content of the serum. It was found that the pharmacodynamic portion of the calcium is constant in the blood of healthy persons. It is on the average 42 per cent and fluctuates between 40 and 45 per cent. In lobar pneumococcal pneumonia without manifestations of severe intoxication the pharmacodynamic portion of calcium is about like that of healthy persons. However, in cases with more pronounced intoxication especially in those with motor unrest the pharmacodynamic portion is reduced. Thus the increase in irritability can be traced to a reduction in the active calcium ions. Caffeine reduces the pharmacodynamic portion of calcium and for this reason caution is necessary in the administration of caffeine in pneumonia patients with motor unrest because the restlessness may become intensified. Parenteral administration of calcium does not change the ratio between pharmacodynamic calcium and total calcium. It is therefore useless to attempt to counteract the decrease in calcium following caffeine medication with administration of calcium.

#### Zeitschrift f Geburtshilfe u Gynäkologie, Stuttgart

103 25-443 (Oct 25) 1932

- Fertility of Female Animals Following Repeated Injection of Testicular Substance. H. O. Neumann and K. Lange—p. 237  
Investigations on Work Metabolism During Pregnancy. R. Hansen and Elisabeth Voss—p. 279  
Studies on Structural Types of Three Hundred Puerperal Women. H. L. Schever—p. 289  
Do Light Rays Influence Hormones? Action in Animals and Plants. H. Kustner—p. 308  
Behavior of Thrombocyte Numbers and Coagulation Time During Gestation. M. Franke and S. Horwitz—p. 318

- Increase of Puerperal Thromboses and Embolisms in Women's Hospital in Basel. F. Koepplin—p. 327  
Elasticity and Permeability of Membranes of Human Fetus. A. Hermstein—p. 360  
Clinical Aspects of Pregnancy in Rudimentary, Atretic, Accessory Uterine Horn. K. Podleschka—p. 369  
Developmental Differences in Binovular Twins (Compressed, Macerated Fetus and Mature Infant). E. G. Abraham—p. 381  
Rare Deformities in Region of Squama Occipitalis. H. Uebermuth—p. 396

**Thrombocyte Numbers and Coagulation Time During Gestation**—Franke and Horwitz observed during pregnancy and delivery a physiologic reduction of the number of blood platelets with a relative increase in the large, young platelets and a normal absolute volume of thrombocytes. The coagulation time was found normal in 70 per cent of the cases, and in the other 30 per cent it was slightly increased or decreased. During the puerperal period the thrombopenia gradually disappears, so that in some of the puerperas the thrombocytes reach normal values within the first week after confinement, while in others more time is required. Nearly all puerperal women show, as a sign of increased thrombopoiesis, a greater number of the large platelets, but the volume of the thrombocytes and the coagulation time are normal. Observations on several women, in whom complications developed during gestation, revealed that the complications exerted no influence on the number, form or volume of the thrombocytes or on the coagulation time.

**Deformities in Region of Squama Occipitalis**—Uebermuth describes peculiar deformities in a new-born female infant. The mother, aged 32, had had one premature birth, four abortions and one normally developed child. The infant whose deformities are described was born during the eighth month of gestation. It was 42 cm long, weighed 1,800 Gm (4 pounds) and, following a spontaneous delivery, it lived for about half an hour. In addition to rare anomalies of the occipital bone the child had diaphragmatic hernia, and the stomach, small intestine and spleen were in the thorax. The occipital anomalies were (1) a bald spot that could be explained as a portion of skin that had persisted in the hairless stage, (2) a grotesquely developed Kerkring's ossicle (the fact that it was still in the cartilaginous stage and without any ossification indicates that it belonged to the primordial cranium), (3) a synostotically closed sutura mendosa, (4) a tripartite os incae, (5) the persistence of a slitlike medial, sagittal indentation of the upper rim of the tabular part of the occipital bone, which, because of its rhombic shape, had produced a sort of large fontanel, (6) a persisting opening of the fontanelar membrane where the sinus sagittalis is found directly under and coalesced with the galea. The author reaches the conclusion that these anomalies of the occipital bone are manifestations of persistence of fetal development at a comparatively early stage and that, as such, they give information about the plan which the development follows.

#### Zentralblatt für Chirurgie, Leipzig

59 2737-2800 (Nov 12) 1932

- Phenol Camphor Mixture Not Injurious to Cartilage if Properly Mixed and Properly Introduced into Joint. E. Payr—p. 2737  
Operation for Incisional Hernias. H. Hilarowicz—p. 2746  
Tissue Death After Local or Conduction Anesthesia. E. Makai—p. 2748  
Serum Prophylaxis with German Anaerobic Serums. A. Dimitza—p. 2752  
Surgical Sclerosing Method of Treatment of Varicose Veins. L. Mosskowitz—p. 2755  
Denudation of Penis and Scrotum. Case. J. Dixelmann—p. 2760  
Technic of Prostatectomy. K. Mermungas—p. 2762

**Prophylactic Use of German Anaerobic Serums**—Dimitza reports the results of treatment of 175 cases of traumatic injuries at the Zurich clinic with the prophylactic and therapeutic use of German manufactured anaerobic serums. All patients were treated within the first hour after the injury. The wound was widely excised, thoroughly iodized and usually left open. Serum was administered simultaneously, to be repeated one or two days later in extensive muscle damage. The excised material was submitted to bacteriologic studies. In eight of the cases, gas bacillus infection was diagnosed both clinically and bacteriologically. Prophylactic serum treatment failed to save four patients from amputation. In four cases with insignificant injuries, gas gangrene developed but could be controlled. The author thinks that the prophylactic effect of these serums is not dependable and that the surgical treatment is of greater importance. The serum did not definitely

lower either the incidence of gas infection or the number of amputations. The results were no better than those previously obtained with the Swiss serums and the Pasteur serums. The possibility of a milder course may, with some reservations, be admitted.

### Klinicheskaya Meditsina, Moscow

10 233 306, 1932

- Eye Diseases in Northern Caucasus S. V. Ochapovskiy —p 233  
Nervous Regulation of Heart B. F. Shirokiy —p 240  
Prophylaxis and Organization of Service in Agrarian Traumatism A. H. Velikoretskiy —p 249  
\*Pathogenicity of Bacterium of Bang for Man I. I. Reznikov —p 255  
Bang's Disease (Brucella Abortus) Cases N. N. Darkshevich —p 262  
Bang Bacterium Infection in Man (Brucella Abortus) Ya. S. Kon —p 265  
Chlorine Therapy in Grip S. A. Feldshtein —p 270  
Skin Reaction in Abdominal Typhus E. M. Gordon —p 272  
Roentgen Irradiation of Spleen in Paratyphoid Infections of Man R. A. Golonzko and Ya. E. Shapiro —p 274  
Blood Picture in Tularemia of Man and of Experimental Animals I. M. Rappoport —p 279  
Treatment of Tetanus I. D. Zartsyn —p 281  
Methods of Evaluation of Results of Treatment in Watering Places B. M. Kudish and S. I. Lurie —p 282  
Erythrocyte Sedimentation in Spotted Typhus A. L. Bosin —p 290

**Pathogenicity of Brucella Abortus for Man**—Reznikov points out that not a single case of authentic brucella infection was observed among the workers of the collective farm "Gigant" in the course of two years of an epizootic of abortions among the cattle. Careful study of the entire gynecologic material of the farm revealed that the incidence of abortions among the women workers and the wives has actually diminished. The puerperal complications were of the usual type, not a single instance of brucella infection being observed. While the pathogenicity of the bacillus for man is an established fact, its incidence is very rare and the attitude of American authors who regard it as a social menace is, in the author's opinion, not warranted. Brucella is apparently a true zoonosis in spite of the marked dissimilarities in the clinical manifestations in cattle and in man. Since there is no specific treatment, prophylaxis becomes most important. Quarantine of the newly arrived cattle and isolation of those infected are necessary. Physicians should familiarize themselves with the various clinical aspects of the disease in human beings, particularly with the undulant character of the fever. The best prophylaxis against the infection in human beings is boiling of milk.

### Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

76 5326 5416 (Nov. 19) 1932

- Diseases of the Eye in Infancy H. J. M. Weve —p 5328  
\*Rare Congenital Abnormality in Shape of Nucleus of Leukocytes G. H. W. Jordans —p 5338  
Familial Deviation to Left of Leukocytes G. C. E. Burger —p 5342  
Treatment of Pulmonary Tuberculosis with Simultaneous Bilateral Artificial Pneumothorax H. Vos —p 5346  
Treatment of Parkinson's Disease by Means of Large Doses of Atropine T. J. A. Vos —p 5357

**Congenital Abnormality in Shape of Nucleus of Leukocytes**—Jordans describes the case of a woman, aged 31, suffering from enteroptosis and asthenia. Examination of the blood revealed a congenital abnormality in the shape of the nucleus of the leukocytes. (1) Only two of thirty-four leukocytes studied had sufficiently segmented nuclei and (2) there was a large increase of weak immature, rod-shaped leukocytic nuclei. Pelger, who first reported this defect, has stated that it may occur in healthy patients and may be transmitted by either parent. The author states that the unusual shape of the nucleus was not caused by immaturity but by an abnormality of segmentation. This peculiarity substantiates the opinion of Nageli and others that the fine alterations in the structure of the nucleus and protoplasm of the leukocyte are more important to blood pathology than the outer shape of the nucleus.

### Hospitaltidende, Copenhagen

75 1135 1146 (Sept. 29) 1932

- \*Changes in Blood Picture in Schizophrenia Especially with Regard to Shifting to Left as Process Symptom K. Hermann —p 1135

**Changes in Blood Picture in Schizophrenia**—Hermann's investigations in the main confirm those of Sagel and of Carriere on shifting to the left of Arneith's blood picture

in schizophrenia and he thinks that this shifting, at all events when pronounced, must be regarded as a sign of a continuing process.

### Hygiea, Stockholm

94 785 832 (Oct. 31) 1932

- Remarks on Treatment of Postencephalitic Conditions with Massive Doses of Atropine L. Ehrenberg —p 785  
\*Porphyrinuria Vera Johnsson —p 797

**Porphyrinuria**—Johnsson reviews the knowledge of porphyrin and porphyrinuria and discusses the various theories as to the etiology of porphyrinuria. She has found thirty-two cases of spontaneous porphyrinuria in the literature, to which a personal case is here added.

### Norsk Magasin for Lægevidenskapen, Oslo

93 1137 1256 (Nov.) 1932

- \*Urinary Obstruction and Basis for Conservative Surgery of Kidney E. Hjort —p 1137  
Experiences with Pirquet Examinations in One Thousand Patients H. G. Dedichen —p 1183  
\*Methyl Alcohol Intoxication and Acidosis H. J. Ustvedt and A. Mohn —p 1191

**Urinary Obstruction**—Hjort reports seventeen cases of urinary obstruction, in nine of which nephrectomy had to be done on account of infectious organic changes. He questions whether these cases might have been accessible for earlier conservative treatment but concludes that early diagnosis would in most cases have been difficult, partly because of late symptoms, partly because of long symptom-free intervals in some instances. The combination of these intervals with grave organic destruction requires that patients with urinary obstruction should not be lost sight of after disappearance of the subjective symptoms, without determining that the obstructing cause has been removed. He points to the immediate favorable effect of nephrectomy in unilateral pyonephrosis, which shows the danger of pyonephrosis as a source of infection. While the danger of radical operations consists in reduction of the organism's reserve of functioning kidney parenchyma, the risk in conservative treatment lies in the maintenance of the source of infection, as seen in three of his cases. He illustrates the ability of the urinary organs to regain form and function after removal of an obstruction, and he shows the value of intravenous pyelography in establishment of the early stage of urinary obstruction.

**Methyl Alcoholic Intoxication and Acidosis**—In Ustvedt's patient with stupor, vomiting and stertorous breathing a considerable acidosis was established. Diabetes, nephritis and inanition were excluded. The case thus supports the view that, in methyl alcohol poisoning, an oxidation of the methyl alcohol to formic acid occurs and that the formic acid through the acidosis it produces is responsible, at least to some extent, for the appearance of the symptoms. Mohn says that ophthalmologically the case was characterized by a latent period of three days, followed by amaurosis, papillitis and then atrophy of the optic nerve and central scotoma.

### Ugeskrift for Læger, Copenhagen

94 1069 1090 (Nov. 10) 1932

- Chronic Progressive Arthritis in Denmark (on Basis of Material of Invalidity Insurance Commission) H. C. Gram —p 1069  
\*Investigations on Occurrence of Actinomyces in Mouth Cavity and Significance for Acute Form of Actinomycosis O. Bjerrum and S. Hansen —p 1075

**Actinomyces in Mouth**—Bjerrum and Hansen found anaerobic Actinomyces in 27 of 112 specimens of pus from abscesses of the gums and in 20 out of 30 teeth with periodontitis. They report the 13 out of 72 cases of chronic and acute cervicofacial and other inflammatory processes in which Actinomyces was found in the pus, surgical treatment in these cases was supplemented by roentgen treatment and potassium iodide. The possibility is suggested that Actinomyces in pus from cases of parulis and granuloma on the roots of the teeth may explain the origin of the many cases of acute cervicofacial actinomycosis heretofore overlooked, because prognosis after ordinary surgical treatment is good, and that diagnosis and treatment of these acute and subacute cases, and particularly observation after treatment, might limit the number of chronic actinomycotic disorders.

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## LONGEVITY AFTER CORONARY THROMBOSIS

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BOSTON

That acute coronary occlusion is often survived by years of active life has become a fact of common knowledge during the past ten years, but the extent to which recovery is possible and the longevity and strenuous activity that may ensue in some cases are but vaguely realized. I have been led to present herewith important and as yet unique information concerning this problem by the discovery at postmortem examination of a firm scar in the myocardium of a man, aged 80, who suffered a single typical attack of acute coronary occlusion at the age of 63, passed a life insurance examination easily two years later, was in such perfect health at 72 that he climbed mountains at a high rate of speed without symptoms, and finally succumbed to apoplexy without heart failure.

When myocardial infarction from acute coronary occlusion was first described by pathologists, and for many years afterward, it was thought to be merely of postmortem interest, and even when it began to be realized in the present century that the diagnosis could be made ante mortem (although in an isolated instance of coronary occlusion Hammer<sup>1</sup> reported the autopsy confirmation of a clinical diagnosis as far back as 1878), it was generally regarded as a rapidly fatal condition. It was Herrick<sup>2</sup> who first clearly pointed out in his classic paper in 1912 that individuals might have temporary or even long standing recoveries from obstruction of the coronary arteries.

Most writers on the subject have referred in studies of series of both postmortem and clinical cases of coronary occlusion to the limits of life after the occlusion as varying from a few hours to a few years, generally about five (for example, Evans,<sup>3</sup> Fulton<sup>4</sup> and Levine<sup>5</sup>).

A few writers have, however, reported some instances in which the patients survived for seven or eight years or more. Burton and his associates<sup>6</sup> have written of a

man who lived for seven years and six weeks after his attack, working hard almost all that time, and who showed at postmortem examination two areas of fibrosis in the posterior wall of the left ventricle and similar involvement of the posterior third of the interventricular septum, the right coronary artery showed almost complete obstruction by calcification. Jegorow<sup>7</sup> has tabulated seventeen cases of his own, eight of which were examined after death, the duration of life in his cases from the first attack of the "status anginosus" varied from one month to fifteen years, with an average of three years and two months. The heart of the patient surviving for fifteen years was examined post mortem and found to have several small old infarcts involving the apex of the left ventricle and the septum, this was a man who died at the age of 68. Parkinson and Bedford<sup>8</sup> reported in 1928 the average duration of life and the limits of survival after coronary occlusion in thirty-one patients who had died and in sixty-eight patients known to be still alive. The average for the living patients was just over thirteen months, with limits of less than one month and of more than five years, while the average for the patients who died was six months, with limits of less than one month and of eleven and one-half years. Conner and Holt<sup>9</sup> analyzed a series of 117 cases of coronary thrombosis in which the patients recovered good health after their first attack of coronary occlusion, of these patients 88, or 75 per cent, lived over a year, 65 over two years, 49 over three years, 40 over four years, 25 over five years, 17 over six years, 15 over seven years, 7 over eight years, 4 over nine years, these same 4 patients over ten years, 3 over eleven years, 2 over twelve years, and 1 patient seventeen years. The patient who remained in good health for seventeen years died of a second attack of coronary thrombosis eighteen years after the first, there was no postmortem examination in his case.

On two occasions I<sup>10</sup> have published reports on the prognosis of coronary thrombosis in a series of private patients of my own. In 1926, out of thirty-two patients who had died, the average duration of life after the acute coronary occlusion was noted to be fifteen and one-half months, with limits of from a few hours to seven years. Of thirty patients who were still alive,

Read before the International Association of Medical Museums Philadelphia April 27, 1932.

<sup>1</sup> Hammer A. Ein Fall von thrombotischem Verschlusse einer der Krönarterien des Herzens, *Wien med Wochenschr* 28: 97 1878.

<sup>2</sup> Herrick J B. Clinical Features of Sudden Obstruction of the Coronary Arteries. *J A M A* 59: 2015 (Dec. 7) 1912.

<sup>3</sup> Evans J A. Coronary Occlusion with Survival. *Minnesota Med* 17: 161 (March) 1930.

<sup>4</sup> Fulton T T. Remarks on the Manner of Death in Coronary Thrombosis. *Am Heart J* 1: 138 (Dec.) 1925.

<sup>5</sup> Levine S A. Coronary Thrombosis. Its Various Clinical Features. *Medicine Monographs*. Baltimore: Williams and Wilkins Company 8: 45 1929.

<sup>6</sup> Burton T A, G. Cowan, John Kay, J. H. Marshall, A. J. Lemme, J. H. Ramage, J. H. and Teacher, J. H. Fibrosis of the Myocardium with Electrocardiographic and Postmortem Examinations. *Lancet* 1: 23 29 (April) 1930.

<sup>7</sup> Jegorow, Boris. Die intravital Diagnose des Myokardinfarktes, *Ztschr f klin Med* 108: 71 1927.

<sup>8</sup> Parkinson John and Bedford Evan. Cardiac Infarction and Coronary Thrombosis. *Lancet* 1: 4 (Jan 7) 1928.

<sup>9</sup> Conner L. A. and Holt Evelyn. The Subsequent Course and Prognosis in Coronary Thrombosis. An Analysis of 287 Cases. *Am Heart J* 5: 705 (Aug.) 1930.

<sup>10</sup> White P. D. The Prognosis of Angina Pectoris and of Coronary Thrombosis. *J A M A* 87: 1525 (Nov 6) 1926. White P. D. and Bland E. F. A Further Report on the Prognosis of Angina Pectoris and of Coronary Thrombosis. A Study of Five Hundred Cases of the Former Condition and of Two Hundred Cases of the Latter. *Am Heart J* 7: 1 (Oct.) 1931.

the average duration of life after the attack was twenty-four and one-half months. In 1931 there was published an analysis of 200 of my private cases of coronary thrombosis seen during the ten year period of 1920 through 1929. The average duration of life after the attack in 101 of these patients who had died was one and five-tenths years, ranging from a few hours to eleven years, the average duration of life of the 94 known survivors was three and two-tenths years, with limits of a few months and of seventeen and one-half years. The subject of the present report had at that time (December, 1929) survived his attack by fifteen and one-half years. The one patient who was still alive over seventeen years after his first attack of coronary thrombosis was a minister who, except for occasional

myocardial infarcts, one at the base of the left ventricle behind, and the other in the anterior and septal wall of the left ventricle toward the apex, while there was a fresh infarct at the periphery of the anterior scar and involving the anterior papillary muscle this third infarct resulting in death. The old infarcts were five and ten years old, respectively, but which was which we could not ascertain. The right coronary artery showed an old calcified complete occlusion, the circumflex branch of the left coronary artery was completely occluded and calcified near its origin, and the descending branch of the left coronary artery showed a fresh thrombus in the lumen of a canalized and calcified old area of thrombosis.

I come now to the report of the first of my two most notable cases. The other patient, with survival to date for twenty years after acute coronary occlusion, will be followed and the case will be reported later.

#### REPORT OF CASE

W. E. W., a manufacturer, aged 63, of long-lived and energetic ancestry, had always been a strenuous worker, he had never been ill except for a long nervous breakdown which lasted for four years from the age of 37. He had always been of slight build but accustomed to much exercise, particularly hill and mountain climbing. He used neither tobacco nor alcohol.

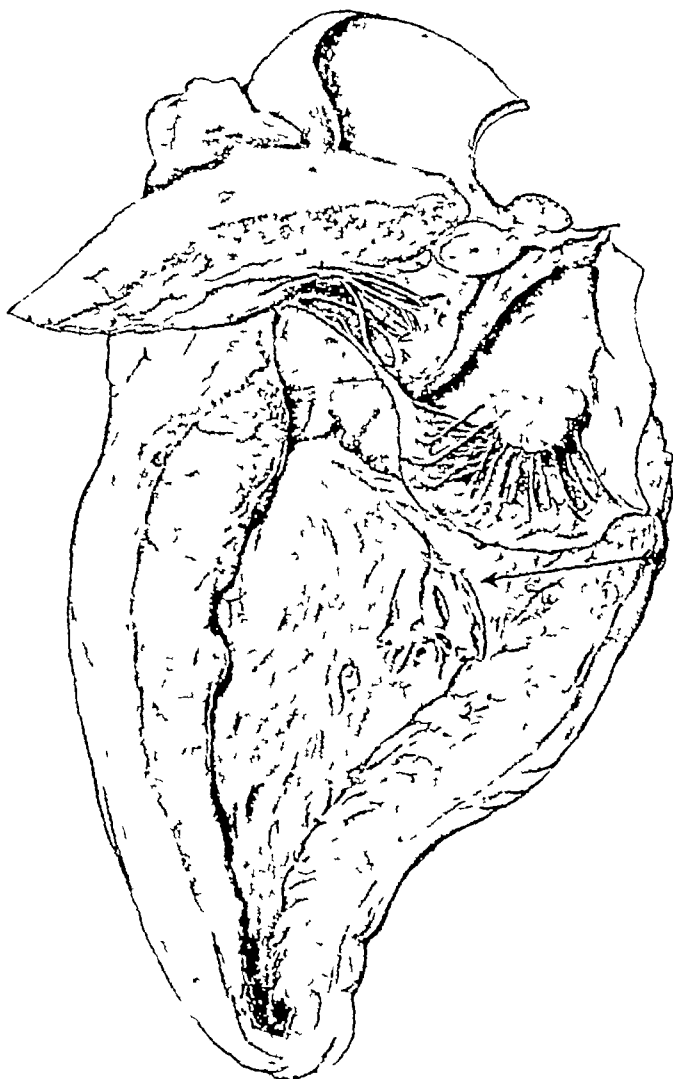
In 1914, at the age of 63, he first noticed a burning, pressing sensation under the sternum on exertion, such as walking fast. This symptom recurred at intervals for two days, and then after a hearty dinner on the third day he was seized by a terrific crushing pain in the epigastrium, radiating up under the sternum to his neck and exhausting him so much that he had to sit down on the curbstone of the sidewalk where he happened to be at the time. He managed to struggle through the rest of the day but was finally taken home, and a physician was summoned. The pain lasted very severely for about eight hours and did not entirely go away for two or three days, he required three hypodermic injections of morphine before any relief was obtained. He was weak when he recovered from the pain, remained in bed eight days, and spent several more weeks at home convalescing before he was able to return to work. It was not remembered whether or not he had fever. Although this was an era when attacks of this nature were generally diagnosed as acute indigestion, his physician recognized that the heart was affected and administered digitalis. Further details of the attack are not known.

After the period of convalescence was over the patient felt as well as he did before the attack had occurred, and two years later, in 1916 at the age of 65, he passed easily a careful physical examination for life insurance, exercise test and all, in spite of telling the examiners of his heart attack.

In the summer of 1923, at the age of 72, he did an unusual amount of mountain climbing with perfect ease and without symptoms. His chief feat at that time was the ascent of Mount Moosilauke in New Hampshire on nine occasions. His usual time of ascent was two hours and fifteen minutes over a 5 mile trail to the top, which had an elevation of 4,810 feet, something over 3,000 feet higher than the foot of the trail. In the summer of 1924 he repeated this climb but was not allowed to make more than one trip because his wife thought he was getting too old to rush up mountains.

In the summer of 1925, at the age of 74, eleven years after his heart attack, he began to be bothered by substernal oppression on exertion such as walking up grade. The oppression would quickly subside on resting, but it began to recur so often and on such relatively slight exertion as walking a few rods or talking vigorously, that in November he consulted me for advice.

Physical examination, Nov. 18, 1925, showed him to be slight but healthy in appearance, with good color and normal breathing. He was alert and quick. His pupils were equal and reacted normally to light. He showed a very slight arcus senilis in each eye. There was no exophthalmos or thyroid



The heart of W. E. W. with the left ventricle opened and exposed to view. The whitened scarred area of the endocardium overlying the healed myocardial infarct is located in the posterior wall of the base of the left ventricle just behind the posterior cusp of the mitral valve (which has been cut from its papillary muscle attachment and raised upward). Overlying this area on the external surface of the heart was a circumscribed patch of pericardial adhesion.

substernal oppression on exertion, was in relatively good health at 64 having survived two more attacks of coronary thrombosis. This minister, now 67 years of age, is still alive and active (March, 1932), preaching every Sunday, although bothered occasionally either by substernal oppression or by paroxysmal dyspnea. He has survived his first attack of coronary thrombosis by twenty years. One of the other patients, reported in 1931 as having survived nine years after his first attack of coronary thrombosis and four years after his second attack, has since died, ten years after the first attack, he remained at work up to the time of his death. Autopsy showed two large healed



gland enlargement. The tonsils were small. Half his teeth were missing. The cervical glands were not enlarged and there was no abnormal pulsation in the neck, either arterial or venous. The heart showed a maximal apex impulse in the fifth intercostal space 7.5 cm to the left of the midsternal line and just within the midclavicular line. The left border of percussion dulness was 7 cm from the midsternum. There was no abnormal supracardiac dulness. The heart sounds were fairly good, the first at the apex being slightly diminished and the second at the aortic valve area being slightly accentuated. There were no murmurs or thrills. The rhythm was normal. The pulse was normal in form and the radial artery walls were slightly thickened. The pulse rate at the apex and the wrist was 72, and the blood pressure 130 mm of mercury systolic and 85 diastolic. The lungs were clear and the abdomen was normal. The liver and spleen were not palpable. There was no edema over the shins or clubbing of the fingers. The knee jerks were equal and active.

An electrocardiogram, November 18, showed normal rhythm at a heart rate of 90, with inverted (coronary) T waves in lead I, flat T waves in lead 2, and somatic tremor.

The treatment then advised was rest, at first in bed, a trip to Florida for the winter and for succeeding winters, light diet, glyceryl trinitrate by mouth freely for the attacks of substernal oppression, and sympathectomy later if necessary. The medical measures advised were carried out, and he improved a good deal but continued to have angina pectoris on effort if he hurried. He used glyceryl trinitrate quite often with quick relief of the substernal oppression.

Reports in 1928 and in 1930 from the patient himself and from his physician showed that his condition was quite satisfactory. He was in good health, barring the substernal oppression, which continued to recur on special effort. He often walked 5 miles a day but had given up mountain climbing entirely. Feb. 7, 1930, at the age of 78, he wrote from Florida as follows: "My friends remark upon my agility. I walk rapidly but notice quickly, without thinking, any slight ascent, even if but for a short distance. I carry 1/200 th grain nitroglycerin pills (1/100 th cut in two) with me all the time, but I do not use one once a month, and then only when I forget."

I never have any pain when I am quiet, or in the night. To sum up, I do not hurry, I do not worry, I do not get into excitement, I do not overeat, and I avoid breathing cold air by coming to Florida winters. I do notice considerable difference when walking briskly in a low temperature over walking the same way in warm air."

Oct. 11, 1931, his right arm was paralyzed for half an hour and his speech was affected for a few minutes, but he recovered rapidly and on October 28 wrote that he felt well again and that his heart condition was the same. "O. K. when I go slow. Dr. L. just remarked last week, 'You have a fine heart'."

Jan. 3, 1932, the patient suffered a complete right hemiplegia with coma and died two days later at the age of 80. His heart action was excellent right up to the time of his death.

An autopsy performed by Drs. Hugenberger and McGinn of the Massachusetts General Hospital, January 8, showed a firm myocardial scar in the posterior wall at the base of the left ventricle with thickened whitened endocardium over it on the inside and a small patch of adherent pericardium on the outside.

The heart was compact and but little enlarged, weighing 400 Gm. The ascending aorta was smooth with a little atheroma in the sinuses of Valsalva and a slight calcific thickening of the bases of the cusps along with delicate but almost complete interadherence of two of the cusps. The coronary mouths were patent and the main coronary arterial trunks themselves were in good condition except for two regions in which there was considerable stiffening, narrowing with calcification, and subacute or chronic thrombosis without complete occlusion: (1) an area 3 cm long in the circumflex course of the right coronary beginning 2 cm beyond the mouth and (2) an area 1.5 cm long in the interior descending branch of the left coronary artery beginning 1.5 cm beyond the mouth. At the distal end of the narrowing of the right coronary artery there was a very thick elongated (3 mm) nodule of calcification around which the narrow lumen of the artery made a detour—thus doubtless

representing the old occluding thrombus, seventeen and one-half years old, with organization and recanalization. The posterior ventricular walls were supplied by two rather large descending terminal branches of the right coronary artery. The circumflex branch of the left coronary artery was a relatively small vessel with inextensive distribution not reaching beyond the lateral margin of the left ventricle—it was much narrowed by calcification at its point of origin at the bifurcation of the left coronary artery.

The mitral, tricuspid and pulmonary valves were normal. The pulmonary artery was normal.

The ventricular muscle walls were somewhat thickened but otherwise apparently in excellent condition in all parts except one.<sup>11</sup> The right ventricular wall thickness was 5 mm., the left 20 mm. The one defective area consisted of a slight thinning and outpouching with dense fibrous wall and whitening of the endocardium 3.5 cm in diameter in the posterior wall of the left ventricle at the base just below the posterior cusp of the mitral valve and behind the posterior papillary muscle and chordae tendineae. This was without doubt the healed infarct seventeen and one-half years old.

There was an area of chronic adhesive pericarditis 3 cm in diameter over the upper posterior part of the left ventricle exactly over the old ventricular infarct. Otherwise there were no pericardial adhesions but only a few milk spots.

The auricles were normal.

#### COMMENT

That this patient's heart showed a well healed myocardial infarct at the base of the left ventricle posteriorly just above the posterior papillary muscle there can be no doubt. That this infarct resulted from acute occlusion by thrombosis of the right coronary artery seventeen and one-half years before death there can be no reasonable doubt, since the clinical course of the heart attack at the age of 63 years was a perfectly typical one and there were no more attacks in any way like it afterward.

The three points of especial interest and importance in this case are (1) the patient's longevity, for he survived the acute coronary thrombosis by seventeen and one-half years and lived to the ripe old age of 80 years in spite of it, (2) that when the patient did finally die, his death was not due to heart disease (but to cerebral hemorrhage), and (3) that for many years after the coronary thrombosis the patient was much more strenuous physically than the great majority of men of his age who have had no heart trouble at all, and even when he approached his eightieth year he was able to walk 5 miles a day without trouble if he did not hurry or climb hills.

Here is a case which may serve, I trust, not only to demonstrate the wonderfully recuperative power of a seriously injured heart muscle, but also to put hope into the breasts of the many victims of coronary thrombosis, who, having recovered from their acute attacks, still live in dread, waiting for the sword of Damocles to fall in the shape of a second and fatal attack.

#### SUMMARY

I have presented herewith, to illustrate the longevity and physical activity possible after acute coronary occlusion, the case of a man who died of apoplexy at the age of 80 and showed at necropsy a firm scar in the heart muscle resulting from the healing of an infarct which occurred seventeen and one-half years before. The heart was otherwise in good condition anatomically and so sound functionally that ten years after the heart attack the patient was able to climb a mountain at fast pace without symptoms, at the age of 73 years.

Massachusetts General Hospital

<sup>11</sup> The left ventricular apex is unusually thin at its very tip but there is no evidence of gross infarction there.



# SQUAMOUS CELL TUMORS OF THE KIDNEY ASSOCIATED WITH STONE

REPORT OF TWO CASES

A. J. SCHOLL, M.D.  
LOS ANGELES

If kidney stones are not removed, secondary infection, urinary obstruction and destruction of the renal parenchyma not infrequently develop. But another element, not so generally known or recognized, may enter into the consideration of surgery in these cases, i. e., the prevention of cancer. Cancer, it is true, is observed in association with stone in only a small number of cases, but there is a definite, clear-cut group in which methods could be successfully employed that would obviate its occurrence.

There are some pertinent observations regarding the association of calculi with cancer. As W. J. Mayo<sup>1</sup> writes "Cancer does not appear in sound tissues. Investigation of the various theories of the causation of cancer shows that the one provocative agent which remains unchallenged is chronic irritation." He says further "Concerning cancer of the interior of the body, we have less definite proof of the causative factors, but cancerous gallbladders usually contain stones." Graham<sup>2</sup> says "Concerning methods of prevention of cancer, the most outstanding fact is that carcinoma of the gallbladder in the great majority of cases is associated with gallstones. Almost all of those who have studied this question believe that the evidence is overwhelming that when calculi are present they have preceded the development of the carcinoma. They should, therefore, be considered as being a definitely precancerous lesion and should be removed before the development of cancer."

The same association appears to hold true in regard to renal stone and certain types of malignant tumors of the kidney. Not infrequently in cases of renal tumors the history suggestive of malignancy is of comparatively short duration, while symptoms of stone or infection have been present for many years. In 108 cases of renal calculi associated with a malignant condition, collected by Martin and Mertz<sup>3</sup> the symptoms of stone averaged nineteen years in duration, the symptoms suggestive of malignancy averaged about five months.

## ETIOLOGY

Halle<sup>4</sup> was one of the first to note that epithelial transformation of the mucosa of the urinary passages resulted from chronic inflammation, either simple or due to irritation, from calculi, indeed, typical squamous cell tumors (with all the characteristics presented by this condition on the cutaneous surface) are occasionally found in the genito-urinary tract. Such squamous cell tumors are found in the kidney itself, either confined to the pelvis or involving the entire organ, and are usually associated with calculi. The presumption

is strong that the irritation arising from the calculi is the proximate cause of the cancer. I wish to invite particular attention to this special class of tumors, because their insidious onset and high mortality make their recognition in the early stages a life-saving procedure.

## COURSE AND INCIDENCE OF THE DISEASE

A large percentage of cases of squamous cell tumors of the kidney have a long-standing history of trauma and infection, at times the early history suggests stone formation. Oraison<sup>5</sup> reported the case of a woman aged 50, whose symptoms of renal trouble started with trauma at 24 years of age, for the ten years preceding her operation she had had almost constant pain of a type suggesting kidney stones. At operation a squamous cell tumor of the kidney was found, together with many stones, the largest weighed 107 Gm. Thomson Walker<sup>6</sup> reported the case of a man, aged 63, who had passed calculi at intervals for twenty-seven years. Recently he had had severe attacks of pain, which led him to seek relief. A squamous cell tumor of the kidney, together with a large, rounded calculus was removed. Darmady<sup>7</sup> recently reported a case of squamous cell carcinoma of the renal pelvis, with operation in 1930, in which hydronephrosis had been present twenty-eight years before. The size, weight and striking lamination of a calculus removed at operation indicated that the latter had also been present for a considerable number of years. Of eleven collected cases, considered by Wells<sup>8</sup> as definite squamous cell carcinomas, six presented stones. In 1924, five cases of squamous cell tumors of the kidney were reported from the Mayo Clinic,<sup>9</sup> in four of these cases large stones were found. In the fifth case roentgen evidence suggested that stones were present, although the large, solid, fibrous tumor was not completely sectioned in a search for calculi. One of the Mayo Clinic patients, a man, aged 54, complained of attacks of right renal colic and intermittent hematuria of twelve years' duration. Recently the pain over the kidney had become more severe and he had lost weight. At operation, a large solid kidney was removed, the mass was composed entirely of squamous cell tumor tissue in which were embedded numerous fragments of a hard, black irregular stone. The second patient in the same series, a man, aged 64, had had attacks of abdominal pain starting nineteen years before, for sixteen years he had had intermittent attacks of hematuria. At operation a squamous cell tumor of the kidney was found, the kidney also contained a number of large irregular stones. In a case reported by Menetrier and Martinez,<sup>10</sup> a woman, aged 49, had right-sided renal pain for five years. At autopsy a squamous cell tumor of the right kidney was found, the kidney also contained a number of stones, the largest of which was 7 by 3 cm. In most of these cases the histologic appearance of the tumor, the extensive, rapidly growing metastases, and a quickly fatal termination suggest a comparatively short duration of the tumor growth.

From St. Vincent's Hospital.  
Read before the American Association of Genito-Urinary Surgeons at Niagara Falls, Ont., May 26-28, 1932.

<sup>1</sup> Mayo W. J. Susceptibility to Cancer. *Ann. Surg.* **93**: 16-19 (Jan.) 1931.

<sup>2</sup> Graham E. A. The Prevention of Carcinoma of the Gallbladder. *Ann. Surg.* **93**: 317-322 (Jan.) 1931.

<sup>3</sup> Martin and Mertz quoted by Davis J. E. Case Reports of Two Instances of Kidney Calculi. *J. Michigan M. Soc.* **17**: 387-389 (Oct.) 1918.

<sup>4</sup> Halle N. Leucoplaxies et cancroïdes dans l'appareil urinaire. *Ann. d. mal. d. org. genito-urin.* **14**: 481-530 and 577-623, 1896.

<sup>5</sup> Oraison. Sur deux cas de calculs du rein, l'un septique avec coexistence d'épithélioma du bassinet, l'autre aseptique. *Ann. d. mal. d. org. genito-urin.* **23**: 749-761, 1905.

<sup>6</sup> Walker J. T. Squamous Carcinoma of the Renal Pelvis Associated with Renal Calculus. *Proc. Roy. Soc. Med., Sect. Urol.* **20**: 20, 1927.

<sup>7</sup> Darmady E. M. Squamous Cell Carcinoma of the Renal Pelvis. *St. Bartholomew's Hosp. J.* **38**: 118-120 (March) 1931.

<sup>8</sup> Wells H. G. Primary Squamous Cell Carcinoma of the Kidney as a Sequel of Renal Calculi. *Arch. Surg.* **5**: 356-365 (Sept.) 1922.

<sup>9</sup> Scholl A. J. and Foulds G. S. Squamous Cell Tumors of the Renal Pelvis. *Ann. Surg.* **80**: 594-605 (Oct.) 1924.

<sup>10</sup> Menetrier and Martinez. Lithiase et cancer du rein. *Bull. Acad. de med.* **79**: 65-74 (Jan. 22) 1915.

## DIAGNOSIS

There are no definite symptoms suggesting this type of growth. Bleeding is comparatively rare, differing from papillary growths of the renal pelvis. In some cases distention of the renal pelvis and the size of the tumor mass is amazing, usually the result of a gradual, slow occlusion, which often is almost painless.

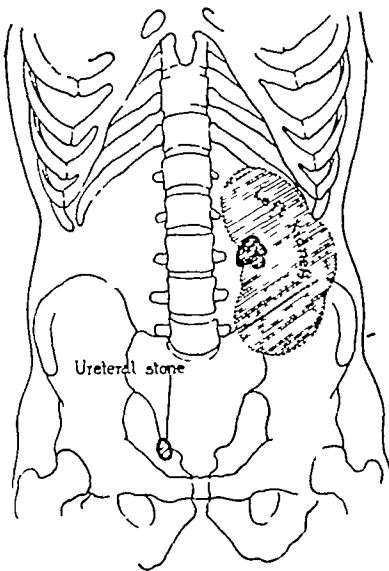


Fig 1—Stone in right ureter and left kidney in case 1. Shadow of left kidney clearly revealed in roentgenogram.

At times the pain which the patient has had intermittently for years increases and is more persistent, or it becomes constant, suggesting a change in the pathologic conditions present. Not all cases are preceded by long-standing symptoms suggestive of infection or stone formation. In several reported cases the finding of a distended pyonephrotic kidney, which presented itself as a large abdominal mass, was the first sign of trouble. Of course, in cases with-

out definite symptoms any preventive surgery is out of the question, but cases without pain or signs of calculi form a comparatively small group, the majority giving a history of some long-standing lesion of the kidney, which might readily have been relieved by surgery.

## PROGNOSIS

Once tumor formation has occurred, the outlook for the patient is very poor. Four of the five patients at the Mayo Clinic died during the first four months. The fifth was alive six months after operation. In a series of cases reported by Kretschmer<sup>11</sup> there were eight nephrectomies for squamous cell carcinoma of the renal pelvis. Five patients died at operation or shortly afterward, and extensive metastases developed in the remaining three not long after the operation. In almost all the individual cases reported in the literature it is stated that death or metastasis resulted shortly after operation. It is a rapidly fatal condition, prevention by early removal of irritative factors is the only hopeful treatment.

## REPORT OF AUTHOR'S CASES

In the following two cases the patients were women who gave a history of long-standing kidney trouble. In both cases the tumor was of such a rapidly growing malignant type that it is improbable that it was present for more than a relatively short time.

**CASE 1**—A woman, aged 57, complained of chills and fever, general malaise and protrusion of the lower part of the abdomen. Eight years before, the thyroid had been removed, on microscopic examination it was found to be tuberculous. Seven years before physical examination revealed a large left kidney and she was told that she had kidney stones. Five years before admission she felt physically exhausted and had a nervous breakdown. She consulted an osteopath who told

her she had a tumor of the abdomen. She noticed the mass at the time, thought little of it, and did not know whether it had increased in size during the last five years. She had had several short attacks of frequency and dysuria but never any hematuria. Ten days before admission, chills and fever developed, since then she had passed only small amounts of urine. On examination it was found that the left side of the abdomen bulged markedly. Palpation revealed a painless, rounded, cystic, movable mass, about 20 cm in length, extending from the left iliac crest to the costal margin and projecting across the midline of the abdomen. The right kidney could not be felt, but there was some tenderness in the renal area.

The bladder urine contained pus and blood, the intravenously injected phenolsulphonphthalein return was 40 per cent, the urea content of the blood and the hemoglobin were normal. Roentgen examination of the kidney, ureters and bladder revealed an ovoid shadow, 1 by 2 cm, in the region of the lower right ureter, in the region of the left kidney there was an irregular shadow of 3 cm, the outline of what appeared to be a large cystic kidney could be made out surrounding the shadow on the left. Plates taken of the chest revealed nothing abnormal (fig 1).

At cystoscopy, ureteral catheterization was done, the lower right ureter, in the region of the ovoid shadow, was almost completely obstructed, but after extensive manipulation a small ureteral catheter was passed by this area to the right pelvis and about 30 cc of blood-stained urine withdrawn. No secretion was observed coming from the left side during ten minutes. A ureteral catheter encountered an impassable obstruction in the region of the left ureteropelvic juncture, no fluid was obtained through this catheter. Twenty-one per cent of phenolsulphonphthalein was obtained from the right kidney in fifteen minutes. A roentgenogram taken after the insertion of the ureteral catheters, which were shadowgraphic, revealed that one passed over the small shadow on the right, the other extended up to the region of the larger shadow on the left. The patient's temperature, which was somewhat elevated, dropped to a normal level several hours after the insertion of the ureteral catheters, the catheter was left in the right ureter for three days. A smooth, somewhat impacted stone was then removed through a low, right rectus incision, following which the patient had an uneventful convalescence. Three months later the left kidney was removed through a posterolateral inci-

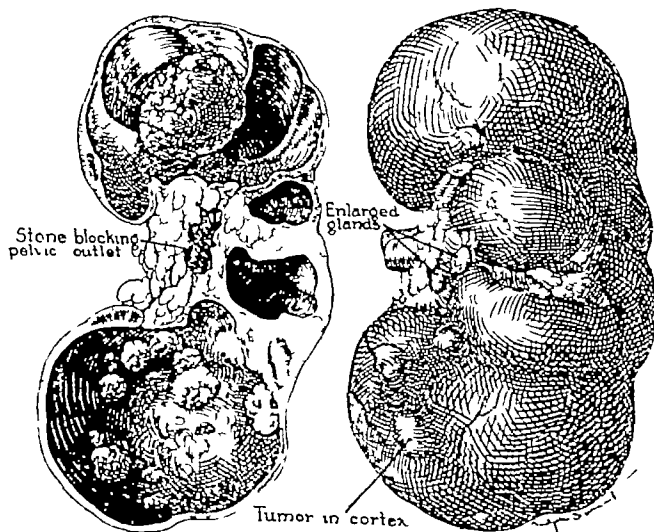


Fig 2—Section of kidney in case 1 showing several large firm rounded tumors and numerous small papillomatous masses.

sion. The kidney was thin walled, markedly distended and lobulated. The patient recovered from the immediate effects of the operation but died two months later.

The kidney was composed of a hydronephrotic cystic shell measuring 22 by 11 by 11 cm. The walls were very thin, about 1 or 2 mm. The surface was slightly granular and the surface lobulations were overemphasized, owing to distention with fluid of the portions in between. Near the hilus were several smooth, hard nodules 1 cm in diameter. In several areas small nodules

<sup>11</sup> Kretschmer H. L. Primary Nonpapillary Carcinoma of the Renal Pelvis. *J Urol* 1: 405-412 (Aug) 1917.

could be seen and felt through the kidney surface, these raised the surface of the kidney slightly. When the kidney was sectioned sagittally, a large quantity of reddish brown fluid containing soft necrotic tissue was found. The pelvis and upper part of the ureter were blocked with a firmly fixed, irregular dark stone about 2 cm in diameter.

The dilated poles of the kidney contained many large nodules measuring from 3 to 4 cm, some were firm and smooth surfaced, others were softer and covered with papillomatous protrusions. There were also numerous small masses from several millimeters to a centimeter in size (fig 2). Some of these were soft and could readily be scraped from the surface of the wall, while others were definitely embedded in the wall. The intervening mucosa in many areas was gray white, and was thickened and roughened in character.

Sections of the tumor revealed atypical epithelial cells of transitional stratified type. There was only moderate hyalinization, the bulk of the growth was composed of rapidly growing, irregular cells, although in several areas the tumor formation could be traced directly from the squamous-cell lining of the pelvis adjacent to the growth. In several places between the tumor masses there were areas of leukoplakia. Many large, atypical mitotic figures were seen. There was marked irregularity in size, shape and staining qualities of the cells, and in some areas very large cells were seen with deeply staining nucleoli (fig 3).

The growth was a squamous cell carcinoma of a high degree of malignancy.

Necropsy revealed numerous metastases. Both lungs contained many small nodules. The left kidney pouch was filled with large retroperitoneal glands. The right suprarenal gland was almost completely replaced by a grayish white tumor. The left suprarenal gland was small and surrounded by a tumor. Both the head and the tail of the pancreas were invaded, and the liver contained so many various sized masses that it was markedly irregular in size and shape. The largest nodule in the liver was 6 cm in diameter. No alveolar arrangement nor definite squamous cell differentiation was found in the secondary nodules.

CASE 2—A woman, aged 67, came for the treatment of an abdominal tumor and a goiter. She had had a goiter since she was 12 years of age, and it had gradually increased in size. During the last six months she had lost 35 pounds (16 Kg) in weight. She had first noticed the presence of a lump in the abdomen two years before. It had grown gradually since then and apparently centered on the right side. She had a dull, constant, nonradiating pain under the right costal margin

She complained of moderate nocturia but of no other urinary symptoms, there had never been any gross hematuria.

Physical examination revealed a diffuse nodular goiter, which was apparently nontoxic and caused little disturbance. There was a large, movable, rounded, nodular mass filling the entire right upper quadrant of the abdomen, extending over the midline and down to the right iliac crest. It was not tender and could be moved without causing pain. The urine contained pus, blood and albumin. The phenolsulphonphthalein return was normal. The hemoglobin was 58 per cent and the red blood count  $3\frac{1}{2}$  million. A roentgenographic examination revealed the irregular outline of a large mass occupying the region of the right kidney. There were numerous shadows suggestive of renal stones and a partially calcified rounded structure near the lower edge of the mass.

Cystoscopy revealed a normal appearing bladder. No urine came from the right ureteral orifice in seven minutes. The secretion from the left side was apparently normal. A catheter inserted in the right ureter met an impassable obstruction near the upper end of the ureter. Twenty-five per cent of phenolsulphonphthalein was returned in fifteen minutes through a catheter inserted into the left kidney pelvis. A small amount of sodium iodide was injected into the right kidney and was seen in the original roentgenogram as an irregular, contracted area at the base of the calcified area (fig 4).

An exploratory examination was made through a small lateral incision. A large cavity was opened and about 10 ounces (300 cc) of thick pus and several small stones were evacuated. The abdominal mass was found to be a tumor of the kidney, the growth having spread from the kidney to most of the surrounding structures, it was much too extensive for extirpation, a section was removed for examination and the incision drained and closed. The patient died one month later.

On pathologic examination the specimen showed a cellular connective tissue framework supporting bands, cords and irregular groups of atypical epithelial cells of the stratified squamous type. There was a marked tendency to differentiation with numerous epithelial pearls (fig 5). Occasional mitotic figures were seen.

The tumor was a squamous cell carcinoma of a moderate degree of malignancy.

COMMENT

In these two cases, as in most of the reported cases, it was obviously impossible to state at what time the cancerous condition started. In the majority of cases, stones have been present for a long period of time, probably long before the onset of the malignant condition, the early removal of these stones might have prevented the formation of the growth.

Comparison of the excellent results, simplicity of procedure and the low operative mortality following the removal of uncomplicated renal stones with the rapidly fatal outcome after the formation of a secondary tumor justify me in suggesting that the majority of kidney stones should be removed as early as possible, this should be done not only as carried out in the usual case to relieve pain and to prevent the destruction of kidney tissue but also because in some cases, as in those described, it should prevent the formation of a malignant tumor.

721 Pacific Mutual Building



Fig 3 (case 1)—Large deeply staining cells and mitotic figures suggesting high degree of malignancy

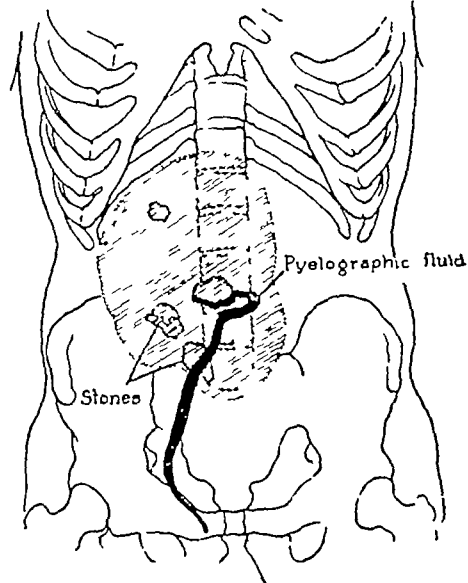


Fig 4—Scattered shadows throughout area of mass in right side in case 2. Pyelographic fluids filling ureter and removal of renal pelvis.

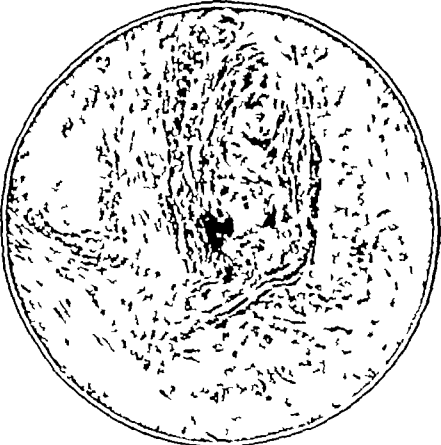


Fig 5 (case 2)—Extensive epithelial pearl formation in section removed from kidney

## WHOOPIING COUGH

## A STUDY IN IMMUNIZATION

LOUIS SAUER, M.D.

EVANSTON, ILL.

In this study, begun in 1928, only selected young nonimmune children are included. Their past medical histories were familiar to me from their infancy. Their ages ranged from 9 months to several years, with an average age of less than 3 years. For obvious reasons, those families were given preference in which there were also older or younger nonimmune children. During these four years I have given more than 1,600 injections to about 300 young children without causing any severe local or systemic reactions.

A fresh supply of the vaccine was prepared every few months by Miss Leonora Hambrecht, A.B., my collaborator in other researches in whooping cough. Each time from five to seven strongly hemolytic strains of *Hemophilus pertussis* (B. pertussis of Bordet and Gengou) were used. These smooth type organisms were isolated from early cases by the cough plate method, shortly before each lot of vaccine was prepared. The bacilli, grown for forty-eight hours in the incubator on the cherry-red Bordet medium, made with freshly defibrinated human (placental) blood, are scraped off and suspended in 0.5 per cent phenolized physiologic solution of sodium chloride. After it has stood in the refrigerator for a week, with occasional vigorous shaking each day, sterility of the vaccine is insured by culture on three successive days. The concentrated vaccine, of an opaque, yellowish white, is then diluted with 0.5 per cent phenolized physiologic solution of sodium chloride until 1 cc. contains approximately 10 billion bacilli. It is then tubed into 10 cc. sterilized vials. The sterilized rubber caps are sealed with the customary antiseptic glue, and the vials are stored in the refrigerator until used. Syringes and

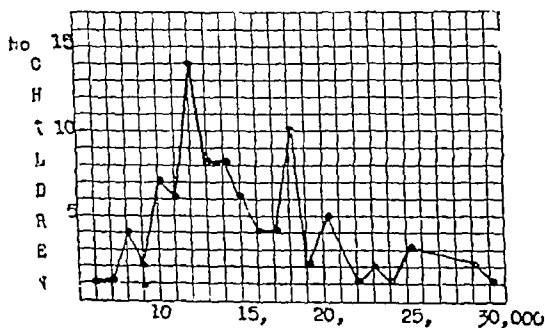


Chart 1—Group A. Leukocyte counts of ninety three children on day of last (eighth) injection.

needles are sterilized in the hot oven, the outside of the stopper is wiped with sterile cotton, saturated with 95 per cent alcohol, the site of the injection is briskly wiped with sterile cotton, saturated with 95 per cent alcohol.

All children were given approximately the same total amount of vaccine, between 7 and 8 cc. (70 to 80 billion bacilli) to each child. To produce minimal local and systemic reactions the first 109 young nonimmune children (group A) were given about 1 cc. hypodermically in alternate arms each week until a total of

eight injections was given. The deltoid and biceps regions were used, but injections were never repeated in the same area (to avoid the phenomenon of Arthus). The local and systemic reactions were, as a rule, surprisingly mild. The local erythema and induration, seldom more than several centimeters in diameter, usually disappeared within a few days. The local tenderness, if present, reached its peak between twelve and thirty-six hours after the injection and was usually gone within two days. Systemic reactions were seldom noted. Occasionally the rectal temperature rose to 101 F., and the child refused the next meal.

Because the reactions were mild, it was decided next to give the same total amount, but to give 1 cc. simultaneously in each arm for four successive weeks. Group B

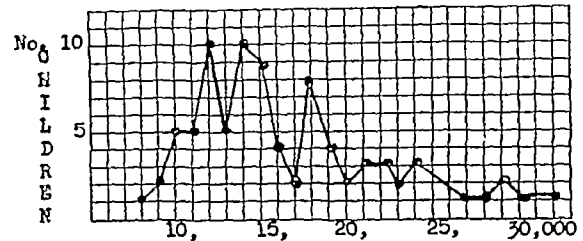


Chart 2—Group B. Leukocyte counts of eighty five children on day of last (fourth) injection.

consisted of ninety-seven young nonimmunes. The local redness and induration was seldom more severe than in group A, but the induration seemed to persist longer. As a rule a subcutaneous nodule could be palpated for a week after each injection. This small, movable mass slowly decreased from week to week. In a month after the last injection, no trace of the injections could be detected. The axillary glands were never enlarged nor tender. The systemic reactions were as in group A. In a few the temperature rose to 102 but was normal within forty-eight hours.

With the hope of making the injections more practical, in 1931 the same total amount of vaccine was given to eighty-eight young nonimmune children (group C), but the injections were completed in three weeks (about 1, 1.5, and 1.5 cc., respectively, in both arms each week). The induration and redness at the site of the injections seldom exceeded 4 or 5 cm. in diameter. The tenderness was, without question, more intense and persisted about twelve hours longer after the second and third injections. The reactions were seldom more severe than are typhoid-paratyphoid immunization reactions. They were never severe enough to postpone an injection. At the height of the most intense reactions, the site of injection felt warm to the touch. No axillary gland enlargement or tenderness was noted. The movable subcutaneous nodule beneath the site of injection decreased from week to week and was never palpable within six weeks after the final injection. The rectal temperature in several instances reached 102, in a few it recorded 103, about eight to twelve hours after the second and third injections, but it was invariably normal by the end of the second day. Never could the local or systemic reaction be compared in severity with the mildest smallpox vaccination reaction. Never did a vesicle, postule or infection of the skin occur.

To determine whether the vaccine injections induce a change in the blood picture, white cell blood counts and differential white cell blood counts were made in

seventy-eight children before the first injection, in ninety-three of group A, and in eighty-five of group B, just before the final injections. Most of the counts were made by Miss Hambrecht. Chart 1 shows graphically the individual range of the ninety-three leukocyte counts of group A, seven weeks after the first injection. Chart 2 shows graphically the individual range of the eighty-five leukocyte counts of group B, three weeks after the first simultaneous injections in the arms. In over 60 per cent of both groups the counts ranged from 12,000 to 15,000 per cubic millimeter. In less than 15 per cent of both groups, no increase was noted. The highest count in group A was 30,000, in group B it exceeded 32,000 per cubic millimeter. No blood counts were made after the final injections. Table 1 gives the average leukocyte count and differential count of the seventy-eight children before the first injection. It will be noted that the normal count in children so young is somewhat higher than in later life and that the lymphocytes predominate. On the day of the final injection, similar counts were made in ninety-three children of group A, and in eighty-five children of group B. The average for each group is given in table 1.

The rise, when it occurs, is apparently due, in most instances, to an increase in the number of small lymphocytes in the circulation. This vaccine seems to influence the blood picture as does whooping cough. In many instances the blood smears resemble those found in the paroxysmal stage of whooping cough. In some, the lymphocytes exceed 80 per cent.

#### EVIDENCE OF CONFERRED IMMUNITY

Evidence of immunity, conferred by these injections of pertussis vaccine, consists of certain (cohabitational or household) exposure and probable (transient) exposure. Under the former are listed eight injected children of five families with six nonimmune controls (table 2). All six controls (and a mother) contracted unquestionable whooping cough from two and a half months to three years after their brothers and sisters

TABLE 1—Average Leukocyte and Differential Counts (Before the First and Final Injections)

Group	Num ber of Child ren	Average Leuko cyte Count	Average Differential Count				Large Mono- nuclears and Transi- tionals
			Poly morpho nuclears	Small Lym pho cytes	Large Lym pho cytes	Eosino phils	
(Before)	78	10,514	37	50	8	2	3
Group A (after 7 injections)	93	14,915	29	58	9	2	2
Group B (after 3 injections)	85	16,540	27	62	8	2	1

had been injected. They had all been exposed throughout the catarrhal period. The injected children were urged to mingle with the patients throughout the quarantine period, i. e., they were allowed to play, eat and sleep together. None of the injected (with the exception of Constance G, in table 2) had a cough or other sign or symptom of the disease, in spite of daily exposure throughout the incubation, catarrhal and paroxysmal stages.

#### ANALYSIS OF CASES

CASE 1—Tom B, aged 2 years, lives in a small bungalow with his parents and 4 year old brother, Robert. Tom had eight weekly injections in 1928. In 1930, Robert, the control,

developed typical pertussis (twenty children in his room at kindergarten were out with pertussis). His cough plates were positive, when his leukocyte count ultimately reached 18,300, the differential count showed polymorphonuclears, 30, small lymphocytes, 59, large lymphocytes 6, eosinophils, 4, large mononuclears, 1. The paroxysmal cough with whoop and vomiting persisted for more than six weeks. A week after the house was placarded, the mother showed definite signs of the disease and her case was reported. Tom never showed any signs of whooping cough, although very intimately exposed to his brother and mother. His cough plates were negative, his blood counts remained normal.

CASES 2 and 3—Roger and Earl L, aged 2 and 4 years, respectively, live in a small bungalow with their parents and

TABLE 2—Cohabital (Household) Exposures

Name	Series	Exposed to	Interval Between Injection and Exposure	Result
1 Tom B	A, 1928	Brother and mother	2 years	Escaped
2 Earl L	B, 1930	Sister	2½ years	Escaped
3 Roger L	B, 1930	Sister	2½ years	Escaped
4 Bernard H	B, 1930	Brother	2 years	Escaped
5 Melvin H	B, 1930	Brother	½ year	Escaped
6 Tom W	C, 1931	Two brothers	½ year	Escaped
7 James W	C, 1931	Two brothers	½ year	Escaped
8 Constance G	C, 1932	Brother	2 months	Nearly escaped

sister, Mary. The boys had four weekly injections in each arm in 1930. In 1932, Mary, the control, developed typical and severe whooping cough. All the cardinal signs and symptoms, listed under case 1, were positive. The house was placarded and the three children continued to play, eat and sleep together, the injected children escaped.

CASES 4 and 5—Bernard and Melvin H, live with their parents and brother, Harold, aged 5, in a small apartment. Bernard, aged 3 years and 1 month, had four weekly injections in both arms in 1930. In 1931 the mother requested that Melvin, aged 11 months, be injected. Six months later, Harold, the control, developed typical pertussis. The cardinal signs and symptoms, listed under case 1, were positive. Despite intimate and continued exposure, the two injected children escaped.

CASES 6 and 7—Tom and James W, aged 4 years and 2 years, respectively, live in a small apartment with their parents and two brothers. Early in 1931 the two younger boys were given the vaccine, the two older brothers served as controls. In the autumn the two controls developed typical whooping cough simultaneously. The two younger (injected) boys escaped in spite of uninterrupted exposure.

CASE 8—Constance G, aged 2 years, lives in a small house with her parents and brother Leo, aged 5 years. After both children had recovered from measles, Constance, a frail child, was given 7 cc (1, 1, 1.5 cc) of the vaccine at weekly intervals in both arms in January, 1932. March 30, Leo, the control, was in the early paroxysmal stage of whooping cough. His cough plates were positive, his blood showed the typical changes, and the cough and vomiting became very severe. He lost 8 pounds (3.6 Kg) in the course of two months. Constance showed no signs of the disease until April 10, when a slight cough was noted. It continued for two weeks and did not become paroxysmal. One cough plate showed a few colonies of B pertussis. She did not vomit, her nights were undisturbed, no medication was given. Three leukocyte counts, made at weekly intervals, were 9,200, 7,450, 7,250 per cubic millimeter, with a differential count of polymorphonuclears, 46, small lymphocytes, 47, large lymphocytes, 4, eosinophils, 4, transitionals, 2. She gained about 2 pounds (0.9 Kg) during a month of quarantine. The measles, shortly before her injections and early exposure, may have influenced her immunity response. The time interval between the injections and the exposure was too short for complete protection.

These eight cases seem to lead to the conclusion that this amount of vaccine will protect, if the interval between injection and exposure is not less than three months

Brief proximity, intimate play, or contact of an injected child and one who, at the time or within several days manifests unquestionable signs of the disease, does not imply certain exposure. Only when the patient disseminates the bacilli and the exposed child in the immediate environment (within a foot or two) aspirates the germ, does actual exposure occur. This was explained to each mother at the time of the final injection, and she was requested to inform me only when her child was unquestionably exposed to a known case of the pertussis. Such reports were analyzed before they were included in the following group of probable (transient) exposures. A questionnaire was sent to each mother, Sept. 1, 1932, asking her to detail the intimacy of any exposure since the date of the injections. During the four years that have elapsed since the 109 children of group A were injected, apparently in 82 instances injected children were "intimately" exposed to active whooping cough without any contracting it. Among the ninety-four children of group B there were twenty-nine such exposures in the past several years without any contracting it. The mothers of the eighty-eight children of group C report sixteen such exposures without any contracting it. None of

TABLE 3—Summary of Injections and Results

Group	A (1928-1929)	B (1930)	C (1931-1932)
Number in group	109	94	88
Number of weekly injections	8	4	8
Total weekly injections	872	376	264
Cohabitation exposure	1	4	3
Accidental exposure	82	29	16
Contracted pertussis	0	0	0 (possibly one)

the 291 injected children (with the possible exception of Constance G, table 2) have had a cough that resembled pertussis

This study is reported at the end of four years because the evidence seems to be sufficient for others to try it out. It must be emphasized in this connection, however, that commercial pertussis vaccines, made from strains long under cultivation in the laboratory, are not desirable and should not be used. The specifications as to the preparation of the vaccine—recently isolated, strongly hemolytic strains, grown only on human blood and the like—should be adhered to.

## SUMMARY

From 7 to 8 cc, of a relatively fresh pertussis vaccine (1 cc = 10 billion), made from five to seven recently isolated, hemolytic strains, given hypodermically in divided weekly doses seem to have immunized an appreciable number of young susceptible children. During the past four years about 300 nonimmune children have been injected without any untoward symptoms. The local reaction is transient. The leukocyte count on the day of the last injection in 60 per cent ranged from 12,000 to 15,000 per cubic millimeter, with the percentage of small lymphocytes often increased. There have been eight certain (cohabitation or household) exposures, and a total of 127 probable (transient or accidental) exposures without any child contracting whooping cough.

6 Church Street

## STUDIES IN ASTHMA

## XVIII THE SURGICAL TREATMENT OF CHRONIC SINUSITIS IN ASTHMA

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In the anaphylaxis clinic of the Massachusetts General Hospital and in the Massachusetts Eye and Ear Infirmary a study has been made of the surgical treatment of chronic sinusitis in asthma in an effort to determine the actual value of such therapy. In this investigation several hundred asthmatic patients were examined with special reference to the nose and throat, and various kinds of treatment were advised. From this group forty patients were selected for treatment by means of sinus surgery. All these patients have been observed from six months to seven years following their sinus operations. The usual method of having the patients report their condition by letter from time to time was employed, but, in addition, I myself examined the great majority of the patients from a number of months to years after operation. Special emphasis is placed on the follow up, since many cases reported in the literature have been conspicuous for the remarkable shortness of the follow-up period. Whereas sweeping statements of opinion have been common, analysis of specific cases observed over a considerable period of time have been few.

## DIAGNOSIS

The patients examined and treated in the present investigation were seen in a special clinic in which it was possible for them to receive a relatively high degree of personal interest, together with a leisurely, unhurried examination of the nose and throat. For the convenience of all concerned, this research clinic was established as a part of the anaphylaxis clinic of the Massachusetts General Hospital, and in this way the already overburdened throat clinic was relieved of additional work.

## SINUS DIAGNOSIS

Both antrums were found diseased in thirty-two cases, both ethmoids in twenty-six cases, both frontals in seventeen cases, and both sphenoids in fifteen cases. Unilateral antrum disease was found in seven cases, a unilateral ethmoiditis in two cases, and a unilateral frontal sinusitis in three cases. The sphenoid was never found to be involved singly or without simultaneous involvement of other sinuses. One or more sinuses were involved in every case in the present series.

A diagnosis of the probable pathologic condition present in the sinus was attempted, e.g., "pansinusitis with pus and polypi," "antral cyst," "thickened membrane in the antrum without retained secretion", and the results at operation were utilized to check the clinical and roentgen diagnosis. The impression one gains from simple clinical examination is surprisingly accurate so far as antral and frontal sinus disease are concerned, less so as regards the ethmoid, and least so as regards the sphenoid.

Roentgenograms were employed as a routine pre-operatively as a check on the clinical diagnosis. Post-operative roentgen reports on the sinus were at times

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The expenses of this investigation were met from an anonymous donation known as the M. G. H. Asthma Fund.

From the Anaphylaxis Clinic of the Massachusetts General Hospital and the Massachusetts Eye and Ear Infirmary.



found to disagree with the postoperative clinical examination. For example, a patient who had had an ordinary radical antrum operation might have a roentgen report of pus in the antrum which had been operated on, while the clinical examination as determined by inspection, suction, swabbing and irrigation revealed no such change. The probable explanation of the discrepancy between the clinical and roentgen observations appears to be in the thickening of the bony sinus wall.

ASTHMA DIAGNOSIS

On the basis of the history, physical examination, special laboratory examinations, skin tests (both scratch and intradermal), nose and throat examination, and roentgen studies, the patients were grouped as follows. Thirty-two had intrinsic asthma, six had extrinsic asthma, one had unclassified asthma, and one had reflex asthma. The last two mentioned patients had relatively mild sinus changes. The six patients having extrinsic asthma showed a purulent and polypoid sinusitis in three cases and a polypoid sinusitis in the remaining three cases. The thirty-four patients having other than extrinsic asthma had sinus disease including cysts, three, thickened sinus lining, four, purulent sinusitis, nineteen, polypoid sinusitis, twenty-three, polyps, thirteen, marked fibrosis, three, and cystic degeneration, four. Obviously, these groups overlap so that the intrinsic category includes cases with several types of sinusitis in the same patient.

Table 1 summarizes the age and sex groups. Since no children under 12 years of age were included in the investigation, any resultant conclusions should be discounted to a greater or less degree, so far as young children are concerned.

TABLE 1—Age and Sex

Age	12-20	20-30	30-40	40-50	50-60
Male	2	1	8	5	4
Female	1	1	7	8	1

OPERATIONS

Fifty-seven operations were done in the course of the study. There had been thirty nose and throat operations in the group previously. Bronchoscopies, polypectomies, extraction of teeth and sphenopalatine ganglion injections are not included in these figures. The operations varied from the most conservative such as intranasal antrotomy, to the most radical, such as the external approach to the frontal, ethmoid and sphenoid with an accompanying radical operation on the antrum. Very extensive operations were done in two or more stages. At the Massachusetts Eye and Ear Infirmary for a number of years it has been usual, in the surgical attack on a nose with unilateral chronic pansinusitis, to resect the anterior tip of the middle turbinate, exenterate the anterior ethmoid cells or possibly the entire ethmoid so far as possible intranasally, and do a radical operation on the antrum. Nasal polypi are removed if present. The patient is then permitted to remain under observation for a considerable length of time before any further surgical measures are undertaken. The experience of the staff having been that simple "assistance" to a pansinusitis will frequently clear it up without further aid. In general, the same principles were utilized in taking care of some of the problems in the present series of cases. However, in two cases very drastic operating

was done immediately, as special indications were present.

MORTALITY

One patient died of postoperative meningitis following ethmoidectomy. There were no other postoperative deaths or serious complications. Two patients died of intercurrent disease from one to two years after operation, the cause of death bearing no relation to the sinus surgery.

INTERPRETATION OF RESULTS

The analysis of figures in estimating the actual therapeutic effect of sinus surgery in asthma is difficult so far as the asthma itself is concerned. The reasons for the difficulty are many. There is a general tendency for asthma to improve more or less for weeks, months, or even years after sinus surgery, but there is also a less general tendency for asthma to recur following a sufficiently long period of observation. The earlier, following nasal surgery, a case is reported in the literature, the more likely such a report is to be favorable, conversely, the longer the duration of follow up, the less favorable such a report may be. An additional and very important factor is the tendency of the patient to give a favorable report regarding an operation and to ascribe benefit to the operation when apparently such improvement has been derived not from surgical measures but from the general tendency of asthma toward remissions in many cases or from elimination of recognized or unrecognized extrinsic factors. For example, one patient reporting herself as almost "cured" of asthma fourteen months after sinus surgery was found to have had very severe asthma for six months after operation (just as before the operation). The eight months of almost complete cure made her ascribe a high degree of value to the operation. It is of course realized that a period of months may be necessary for complete healing locally in the nose following sinus surgery. An additional factor is the intense desire of the patient with a severe case of asthma to think himself improved by any surgical measure whether or not such is the actual fact. For example, one patient reported his asthma as 70 per cent improved whereas the duration, frequency and severity of attacks were greater than before operation. Conversely, one phlegmatic but discouraged patient tersely reported her "asthma same, nose better" seventeen months after operation, whereas a study of her present condition as compared with the record of her preoperative attacks showed marked improvement.

RESULTS

*Results So Far as Asthma Is Concerned*—Of the forty patients who were operated on, five were "cured" of asthma, nine were markedly improved, six were moderately improved, and two were slightly improved. There were eighteen patients who showed ultimately no improvement in their asthma. Of these failures, seven patients showed temporary improvement or "cure." Thus, two cases were "cured" and one was moderately improved for about six months, with recurrence then of severe asthma. Two patients were "cured" for one month, after which their asthma recurred, another patient was "cured" entirely of asthma two years after operation but then became as badly afflicted as ever. Another showed moderate improvement for sixteen months, after which the asthma was as bad as ever. In the remaining eleven of the eighteen failures, there was no benefit whatever.

to the asthma, some of these patients had vasomotor rhinitis, which was improved or "cured." A subsequent report will be made regarding these and other patients who have been studied with special reference to the treatment of vasomotor rhinitis.

Six of the patients had extrinsic asthma. None of them received any benefit to the asthma from sinus surgery. One of these patients was found to be "cured" of asthma so long as he avoided contact with dogs, although the patient was inclined to ascribe his benefit to a sinus operation, which was a complete failure so far as the nose was concerned. Another patient having extrinsic asthma reported very satisfactory improvement in her nose without much change in her asthma following operation except while she was in the hospital, but temporary changes in her residence and avoidance of contact with cats and dogs enabled her to report marked improvement in her asthma. The remaining patients in this group showed no benefit whatever so far as their asthma was concerned, although they were classified as having extrinsic infected asthma.

It is to be emphasized that, in every case in the present series, sinus surgery was advised on the merits of the pathologic condition of the sinus present in each patient and not in an effort to cure asthma per se.

**The Follow Up.** All the patients reported as "cured" were followed for from two to three years except one whose follow-up period was nineteen months. All the patients showing marked improvement were followed for from one to two years. In the remaining cases showing moderate or slight improvement, only two were followed for less than a year.

Since the duration of the follow-up period has a direct relationship to the accuracy of any study in asthma, it is appropriate to mention further details of this phase of the present investigation. Eleven patients were followed for from two to seven years, twenty patients for from one to two years, eight patients for from six to twelve months. The remaining patient died two days after her operation. Thirty-seven of the patients were seen by me in the course of the follow up. Twenty-five patients had a complete local examination of the nose a year or more after operation, while twelve patients had such an examination less than a year after sinus surgery, but only two of the latter group were last seen less than six months from the time of the last operation. This adds interest to the study of the local result of each operation in the nose itself.

**Results So Far as the Nose Is Concerned.**—In three patients the local result in the nose was classified as a total failure, since pus and polypi were found to have recurred in the nose and sinuses. A fourth patient showed an atrophic rhinitis on the side of the nose which had been operated on and was listed as a "failure." Polypi recurred after one year in one "excellent" result, and in two "good" results after one and one-half years and one year, respectively. In the remaining thirty cases, nine showed a "good" local result and twenty-one an "excellent" result.

By "excellent" is meant a pink or pale pink mucous membrane in the side of the nose operated on, without the appearance of any inflammatory swelling and without pus or polypi in the operated side of the nose and without demonstrable pathologic changes in the post-operative antrum on inspection, suction swabbing or irrigation and without pus, polypi or swelling of the centered ethmoid area and without evidence of

involvement pathologically of the frontal sinus on transillumination or of the frontal and sphenoid sinuses on roentgen examination.

By "good" is meant a return almost to the description given for "excellent." A patient having a "good" result might show a slight amount of crusting in the nose, slight polypoid degeneration of a portion of the nasal or sinus mucosa, or perhaps an occasional droplet of mucus or a small polyp or an occasional crust in the nasopharynx.

The patients having "good" or "excellent" results in the nose were relieved entirely or almost entirely of any complaint which they had had regarding their noses. Patients who had occasional head colds which subsided uneventfully in a short time were not excluded from the classification just described, even though inflammatory swelling of one or more sinus linings might accompany such a cold.

The observations reported are accurate only for the duration of the follow-up period. It is recognized that reinfection may supervene in the nose in any of the cases reported.

However, the results reported do not bear out in asthmatic patients the axiom "once a sinus always a sinus." They evidence the fact that the type of nasal surgery utilized does not necessarily produce excellent local results in proportion to the degree of radical surgery in operating. For example, in one instance a radical antrum and an extensive intranasal ethmoidectomy were employed on one side of the nose, while more conservative measures, including an intranasal antrotomy, resection of the anterior tip of the middle turbinate and complete removal of nasal polypi, were employed on the other side, and both sides eventually showed apparently normal nasal and sinus mucosa, whereas formerly a bilateral polypoid pansinusitis had been present. Very drastic sinus operating resulted in a unilateral atrophic rhinitis in a patient previously mentioned. The patient who underwent the most drastic operation of the entire series secured a good but not excellent local result. In general, the ordinary measures employed in the treatment of nonasthmatic sinuses have been successful in the asthmatic patient. This series does not bear out the necessity of extremely drastic surgery as advocated by Ferris Smith.<sup>1</sup>

**Asthma Results Evaluated in Terms of the Nasal Pathologic Changes Found at Operation.**—The removal of antral cysts in three cases resulted in no benefit to the asthma in two patients but in a "cure" in the third patient. The removal of thickened sinus membrane resulted in no improvement whatever in four cases. A fifth patient, showing very marked thickening of the antrum and ethmoid linings with polyps in the nose but without polypoid membrane in the sinuses, had moderate improvement in the asthma. Cystic degeneration of the sinus lining was found in four patients. Three of these had pus pockets in the membrane and were improved or cured. The fourth patient having simple cystic degeneration of the sinus mucous membrane without pus pockets was not improved. Three patients who had had previous sinus operations were found to have fibrous sinus linings accompanied by polypoid degeneration. One of the patients showed marked improvement in his asthma after the secondary operation, while the other two operations were failures.

In twenty-two of the cases, pus was found in one or more sinuses. In nine of these patients there was

<sup>1</sup> Smith, Ferris. Asthma, Its Etiology and Surgical Treatment. Ann. Otol. Rhin. & Laryng. 35: 1095 (Dec.) 1929.

no ultimate benefit to the asthma, two were cured, two were slightly improved, three were moderately improved and six were markedly improved. In twenty-five cases, polypoid membrane was found in the sinuses. In ten of these patients the asthma was unimproved, four patients were "cured," one slightly improved, four moderately improved and six markedly improved. In seventeen patients, polyps were found in the nose and sinuses. In this group there were ultimately five

TABLE 2—Pathologic Observations at Operation Checked with Asthma End-Result

Pathologic Condition	Total Number of Cases	Improvement				Failure
		Cure	Marked	Moderate	Slight	
Pus	22	2	6	3	2	9 (41%)
Polyps in nose and sinuses	17	2	5	3	2	5 (29%)
Polypoid sinus membrane	25	4	6	4	1	10 (40%)
Antral cyst	3	1	0	0	0	2
Thickened membrane	5	0	0	1	0	4
Cystic degeneration	4	1 (pus pocket)	2 (pus pockets)	0	0	1 (no pus pockets)
Secondary scarring and polypoid degeneration	3	0	1	0	0	2

failures as regards the asthma, but two cases were "cured," two were slightly improved, three were moderately improved and five were markedly improved. These facts are summarized in table 2.

*Paradoxical Observations in End-Results*—Three patients having intrinsic asthma with no foci of infection except in the sinuses showed marked improvement in two instances and moderate improvement in one instance after only one side of a bilateral pansinusitis had been attacked surgically. Conversely, seven patients can be cited as having an excellent nose following operation, all sinusitis apparently having been cleared up, but whose asthma was unimproved or only temporarily improved. Two members of this group had extrinsic asthma, however, and two others had a chronic tonsillitis.

There were "other foci" in ten cases. In the group of failures, five patients had chronic tonsillitis and two others had infected teeth. Of these seven, two were "cured" for six months following the sinus operation, despite retaining infected tonsils, the remaining three patients having infected tonsils and the two having infected teeth received no benefit from sinus therapy. One patient who was "cured" of her asthma had not had her chronically infected tonsils removed. A patient whose asthma was markedly improved by the removal of extrinsic factors retained her infected teeth. The tenth patient of the group showed marked improvement of his asthma after sinus surgery, despite retaining chronically infected tonsils.

#### INDICATIONS FOR SINUS OPERATIONS IN ASTHMATIC PATIENTS

Sinus disease demanding surgical treatment on its own merits may be stated as the most conservative formula or generalization in dealing with asthmatic patients. Here decision is easy, not difficult. Patients whose asthmatic attacks are precipitated by head colds usually report fewer colds and therefore less asthma following sinus surgery. In desperate cases, sinus surgery may be forced as a last resort and may interrupt a vicious downward cycle, though leaving the patient

with severe asthma. By providing even temporary relief, such surgery may be life saving.

The present study indicates that patients having polyps in the sinuses and nose, and patients having purulent cystic degeneration of sinus mucous membrane, are the most favorable patients for operation so far as the asthma is concerned, but the latter condition cannot be diagnosed preoperatively. Purulent sinusitis is less favorable than sinuses showing polyps.

Patients having extrinsic asthma received no benefit to their asthma from sinus surgery, nor did patients having slightly or moderately thickened sinus linings. However, "the worse the sinus disease, the greater the benefit to the asthma," is not necessarily true. Patients who have had drastic sinus surgery without benefit to their asthma are usually made no better by the "doing over" of the sinus operations, and such efforts discredit nasal surgery.

A temporary or permanent change of environment, and recognition and elimination of extrinsic factors so far as possible, should be carried out before sinus surgery is advised, but sinus surgery should not ordinarily be advised as a last resort.

There are many kinds of sinusitis—some favorable, some unfavorable—for surgical treatment. About 80 per cent of asthmatic patients show some degree of sinus disease, but it does not follow that surgical treatment (or any treatment in symptomless cases) is necessary. If one recognizes the fact that there are almost as many brands of sinusitis as of asthma, progress is made.

#### SUMMARY OF RESULTS

The results in the patients having sinus surgery were as follows, so far as the asthma was concerned:

1. Fifty-five per cent (22 cases) were improved or "cured", 5 per cent (2) of these cases were explained by elimination of extrinsic factors, not by the surgical treatment.
2. Corrected, 50 per cent (20 cases) were improved or "cured":
  - (a) 10 per cent (4 cases) were "cured"
  - (b) 20 per cent (8 cases) showed marked improvement
  - (c) 15 per cent (6 cases) showed moderate improvement
  - (d) 5 per cent (2 cases) showed slight improvement
3. Forty-five per cent (18 cases) were "failures":
  - (a) 17.5 per cent (7 cases) were improved or "cured" for from one month to two years, then the asthma recurred
  - (b) 27.5 per cent (11 cases) received no benefit whatever as regards the asthma
  - (c) No extrinsic, reflex or unclassified asthmatic patient was helped by operation

So far as the nose was concerned 75 per cent of the patients (thirty) showed satisfactory nasal results. There were seven "failures" observed in which pus or polyps, or both, recurred locally in the nose and sinuses. Two patients who were not followed except by letter, and one death, accounted for the remaining cases.

#### CONCLUSIONS

1. According to observations in the group studied 75 per cent of the patients having asthma associated with sinusitis show a favorable local result in the nose following nasal surgery but have only about a 50 per cent chance for relatively long continued favorable changes in their asthma.

2. Six patients having extrinsic asthma were not improved.

3. Surgical improvement of one side of a bilateral pansinusitis may be followed by marked improvement

in the patient's asthma. Conversely, an excellent result may be obtained in both sides of a bilateral pansinusitis in some cases of intrinsic asthma without improvement in the asthma.

4 The most favorable cases for surgical improvement in asthma are those with polypi in the nose and sinuses, patients having thickened membrane or cysts in the sinuses are unfavorable subjects for such improvement.

5 Temporary improvement (in six cases) lasting for from one to six months or more (and in one case for two years), even though followed by ultimate recurrence in the asthma, is worth a great deal from the patient's point of view.

6 Indications for sinus operation in asthmatic patients include

- (a) Sinus disease demanding surgical treatment on its own merits
- (b) Recurrent head colds precipitating asthmatic attacks, the aim of surgery is to lessen the number of such colds
- (c) Attempting to interrupt the vicious downward cycle in the very severe case of asthma by attempting to gain even temporary relief
- (d) Cases in which removal of polypi or sinus irrigation yields temporary benefit

7 All data and conclusions are accurate only for the duration of the follow-up period in the forty cases reported.

395 Commonwealth Avenue

## SPINAL ANESTHESIA

A NEW TECHNIC ADAPTABLE TO THE BEGINNER

JOHN O BOWER, MD

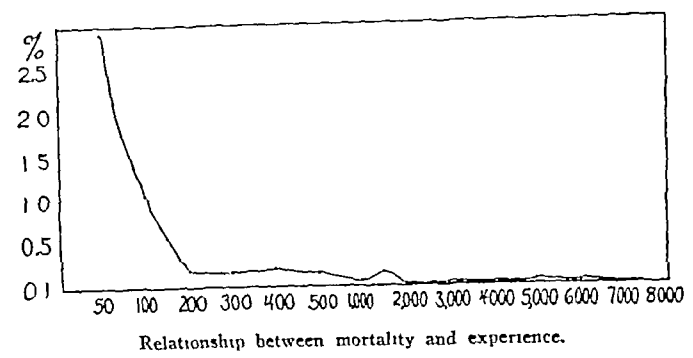
J H CLARK, MD  
AND

J C BURNS, MD  
PHILADELPHIA

Spinal anesthesia is responsible for more deaths than any other anesthetic in proportion to the number administered. The mortality diminishes with the experience of the operator. The relation of experience to mortality is shown in the accompanying chart. With the exception of the "less than 500" series, the figures quoted were obtained from the literature from 1907 to 1930. Forty-one per cent of the "less than 500" series were obtained from surgeons personally interviewed when they visited our booth at the Scientific Exhibit of the American Medical Association in Philadelphia in June, 1931, where we demonstrated "The Cause and Prevention of Deaths from Spinal Anesthesia." Fifty-nine per cent were obtained from the literature. This indicates that when physicians and surgeons record their results the tendency is to accumulate a sufficient number of cases to bring their mortality rate within or usually below what is considered average. This is unfortunate because in seeking the truth in any branch of medicine one is deprived of observations which form the basis of experience, part of which is information acquired from others. There is no modern surgical procedure in which this failure to report near catas-

trophes and deaths has had such a damaging effect on the successful management of surgical patients as in spinal anesthesia. In addition, hospital reports which should give a true cross section of mortality are becoming less frequently available.

The false security occasioned by the reporting of large series of cases with low mortality, the marked muscular relaxation making intra-abdominal operations easier and the publicity given spinal anesthesia by manufacturers,



who advertise that a particular anesthetic is safe and controllable, are largely responsible for the wave of enthusiasm for spinal anesthesia.

While 1 death in 120 is not an exact estimate of the mortality of spinal anesthesia in the "less than 500" group, it is probably as accurate as 0.1 per cent in the 6,000 group. Undoubtedly, many deaths have occurred from the anesthetic that have been attributed to other causes. Because of the frequency with which the question of what constitutes a spinal death presents itself, we submit the following:

Spinal anesthesia deaths may be classified as (1) immediate—those occurring on the operating table following the administration of the anesthetic—or (2) delayed—those occurring after leaving the operating room, from the shock induced by the anesthetic.

There is seldom any question as to the cause of the table death. The most common cause is an incorrect evaluation of the patient's ability to withstand shock. The patient who would have died regardless of the kind of anesthetic used, the patient with advanced cardiac disease, and the moribund or markedly shocked patient should not be given spinal anesthesia, and the operator who has a death in this group should face the situation squarely and record it as an error in judgment. Errors in technic and lack of knowledge of the effect of the drug are responsible for the remainder.

Spinal Anesthesia Mortality

	Number of Cases	Deaths	Mortality	Number of Surgeons Operating
Less than 500 group	117 710 12 729	180 83	1 in 6740 1 in 153	102 70

In the second group are those patients who, following the injection, developed a marked degree of circulatory relaxation and a moderate degree of respiratory embarrassment. Very frequently the blood pressure drops 50 per cent, and aeration of the lungs is accomplished only with the diaphragm and upper accessory respiratory muscles. Most of these patients react following the intravenous administration of epinephrine or intramuscular injection of ephedrine, inhalation of carbon dioxide or artificial respiration. However, a definite number develop secondary shock and die. With the

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last mentioned, it is impossible to state definitely the time during which the anesthetic may be considered a factor in the cause of death. The shock induced by the operation is most frequently held responsible. We believe that the death of a patient whose blood pressure drops more than 50 per cent or who develops respiratory embarrassment within twenty minutes following the injection and who does not react to within 25 per cent of the normal before the operation is finished and subsequently develops secondary shock and dies is an anesthetic death whether on the operating table or in the recovery room. Deaths following a prolonged operation necessitating a supplementary general anesthetic or those cases of shock due to secondary hemorrhage are of course excluded.

In addition, there is the more remote death that of a patient with a damaged myocardium who is given spinal anesthesia, collapses on the table, is given epinephrine intravenously and reacts temporarily but dies two or three days later of cardiac dilatation. This type is invariably not classified as an anesthetic death. We have shown experimentally and clinically that the heart dilates under spinal anesthesia if the anesthetic ascends sufficiently high. Surgeons using any technic in which the anesthetic may ascend higher than the sixth thoracic nerve root must select patients with the knowledge that their hearts may be called on to withstand dilatation. The degree of dilatation will vary with the condition of the patient's myocardium, the toxicity of the drug and the concentration of the solution coming in contact with the nerve roots.

In attempting to develop a technic, surgeons have tried various methods. The conservative surgeon or his associate takes a course at a postgraduate school, the less conservative visits clinics or attempts to develop a technic of his own. Naturally, his results will vary with what he has read or seen demonstrated. To illustrate. A successful surgeon in one of the Western cities sent his associate to one of the Eastern clinics to obtain information regarding the technic of spinal anesthesia. The particular surgeon he observed was removing tonsils with the intraspinal injection. The assistant returned home and reported to his chief that the drug used was absolutely safe. Their first patient was a young woman, the anesthetic was given and she died immediately. Such catastrophes happen too frequently and are due in part to ignorance of the effect of the drug when injected intraspinally and in part to the misinterpretation of the word safety as applied to patients.

#### TECHNIC

The following technic has been developed especially to control upward diffusion of the anesthetic.

Any fluid to be used as a diluent for an anesthetic drug and injected into the spinal canal must be sterile, nonirritating and diffusible. The patient's own blood serum was selected because of these properties. It is heavier than the cerebrospinal fluid and is always available. Using varying amounts of human serum in which was dissolved procaine hydrochloride we induced spinal anesthesia in dogs. Paralysis of both hind and fore legs with varying heights of anesthesia was obtained. The animals recovered with no untoward effect. With the same technic the anesthetic solution was injected in human beings for operating on the perineum. The 10 cc Keidel tube fitting the ordinary centrifuge is sterilized in the autoclave for thirty minutes at 20 pounds pressure. The blood is withdrawn

from the patient in the usual manner and immediately centrifugated for fifteen minutes at 1,500 revolutions per minute. Usually this yields clear serum. Insufficient vacuum in the Keidel tube resulting in a very slow withdrawal of blood may interfere with the separation of the clot or cause slight hemolysis. The blood is usually withdrawn the evening before operation, occasionally the serum will not separate. If this occurs, another specimen is obtained the morning of the operation. A 5 cc glass syringe and a 20-gage 10 cm needle are used, and 3 cc of the clear serum is withdrawn from the Keidel tube. The serum is then mixed with from 100 to 150 mg of the anesthetic. The patient is placed on the operating table in the upright position, the assistant stands on a footstool facing the operator on the patient's left, his left arm is placed around the patient's occiput, flexing his head and spinal column, and with both hands he grasps the patient's folded arms and presses them against the lower part of his chest. The dorsolumbar region is painted with tincture of iodine. The needle is inserted into the third lumbar interspace. When the ligamenta flava are penetrated, the stylet is withdrawn and the needle gently rotated forward. The spinal pressure is taken immediately, then the syringe containing the anesthetic is attached to the needle and the solution injected very slowly, 3 cc should require from forty to sixty seconds. If the patient is placed on the operating table with the torso at a 135 degree angle with the thighs, the perineum, thighs, feet and legs will become anesthetized, usually without paralysis of the motor nerves. If higher anesthesia is desired, the patient is placed in the supine position for three minutes, then the head of the operating table is raised to a 160 degree angle. Anesthesia to the anterior superior spine is usually obtained in this way. Using this technic we have performed operations on the lower extremities, the perineum, the inguinal region and the abdomen below the umbilicus. We have not perfected a technic for the upper part of the abdomen.

Because of the difficulty of obtaining satisfactory serum at times, a synthetic serum was tried, the Bayliss acacia formula being used. It has the same specific gravity as blood serum and apparently the same degree of diffusibility. We induced spinal anesthesia in dogs, using the synthetic serum, in which we dissolved procaine hydrochloride. Solutions prepared with and without tricresol showed no untoward effect. The solution prepared without tricresol can be kept in ampules for several months without precipitation.

#### Formula of Acacia Solution

Acacia (selected tears)	0.3	Gm
Sodium chloride	0.045	Gm
Distilled water	5.0	cc

The acacia and sodium chloride are dissolved in the distilled water. The solution is filtered and poured into ampules. These are placed in the autoclave for three fifteen-minute periods at 110 C, 20 pounds pressure.

#### SELECTION OF THE PATIENT

While the method described is safer because of the lessened possibility of the drug affecting the cardiac nerves and nerves that supply the muscles of respiration, high diffusion can occur, as we have reported. We believe that patients should be selected as advised in our recent article.<sup>1</sup>

<sup>1</sup> Bower, J. O., Clark, J. H., Wagoner, George, and Burns, J. C.  
Surg., Gynec. & Obst. 54: 882 (June) 1932.

## CHANGES IN BLOOD PRESSURE

Early in our work we observed an unusual feature, a rise in systolic blood pressure immediately following the injection. This rise occurred in 68.67 per cent of the cases, in 19.28 per cent there was no change, and in 12.05 per cent there was an initial decrease. The average maximum decrease in pressure for the entire series was 13.5 per cent. The average maximum decrease in pressure, when anesthesia was present to or below the iliac crest, was 6.7 per cent, at or below the costal margin, 15.7 per cent, and above the costal margin, 30.4 per cent. In two instances the cardiac nerves and the nerves of respiration were partially paralyzed, and the diastolic and systolic pressures could not be taken, in one of the two instances, the high effect was due to a too rapid injection of the anesthetic solution. The cause of the other was undetermined, however, teleroentgenograms showed a marked cardiac dilatation, confirming what we found by animal experimentation to be the cause of the drop in blood pressure. Of the cases with anesthesia to the crest of the ilium or below, 23.4 per cent showed a persistent rise in blood pressure and 16.6 per cent showed no change. Of those with anesthesia to or below the costal margin 12 per cent showed a rise or no change in blood pressure, but no instance of a rise or maintenance of blood pressure was recorded if the anesthesia was above the sixth rib.

In 25 per cent of the entire series, the blood pressure persisted.

## EFFECT OF THE ANESTHETIC ON THE NERVES OF RESPIRATION

With the technic described, the possibility of the involvement of the respiratory center and the roots of the phrenic nerve is reduced to a minimum. With paralysis of the intercostals and lower accessory respiratory muscles, respirations are not seriously affected, and, while the patient can breathe with the diaphragm alone, we have always attempted to limit the upward diffusion of the anesthetic to the upper border of the sixth rib.

## RAPIDITY AND SELECTIVITY OF THE ANESTHETIC SOLUTION

Anesthesia is delayed when either human or synthetic serum is used, as compared with the anesthesia induced by dissolving the drug in the cerebrospinal fluid. The ascent of the solution in the spinal canal cannot always be accurately estimated by the upper level of the loss of the sense of touch and pain. This may be due to a selectivity of the drug for the posterior roots, to the specific gravity of the solution or to factors as yet undetermined. The motor nerves to the lower extremities were not paralyzed with anesthesia to or above the costal margin in 15 per cent of the cases, between the costal margin and the iliac crests in 33½ per cent, and below the iliac crests in 55 per cent.

## DURATION OF ANESTHESIA

The concentration of the solution coming in contact with the nerve roots is the important factor in the duration of the anesthesia. This is dependent on the amount of drug used, the amount of spinal fluid in the canal and the technic used in mixing. Without withdrawal of spinal fluid, 100 mg of procaine hydrochloride dissolved in serum has been injected slowly into the spinal canal at the third lumbar interspace and anesthesia of the perineum has persisted for two hours

and thirty-five minutes. In this instance, sacral nerves were bathed in a concentrated solution. Whether the attempt to obtain a high anesthesia is made by injecting the solution at a higher interspace, by barbotage, or by changing the position of the patient, it is always associated with a diminished concentration resulting in an anesthesia of shorter duration. As the cerebrospinal fluid pressure is usually an indication of the amount of fluid in the spinal canal, we advise the taking of cerebrospinal pressure as a routine.

## CONCLUSIONS

1 The mortality from spinal anesthesia is exceedingly high, particularly for the beginner.

2 Because of recent discoveries relative to the cause of death, a new technic is presented which is especially adaptable to the beginner.

2008 Walnut Street

## HOOKWORM DISEASE IN THE SOUTH PACIFIC

## TEN YEARS OF TETRACHLORIDES

S M LAMBERT, M.D.

NEW YORK

In November, 1921, Maurice C Hall recommended carbon tetrachloride as a hookworm anthelmintic for man. In February, 1922, I began to use this drug in Fiji for mass treatment of the population. In the course of the next ten years, 286,486 persons in the South Pacific islands were treated, under my personal observation, with carbon tetrachloride, tetrachlorethylene, or these drugs in combination with oil of chenopodium. This number included Melanesians, Polynesians, East Indians, and a few thousand Europeans and Chinese. The majority of the treatments were of carbon tetrachloride or tetrachlorethylene.

Seven deaths occurred among the persons treated between 1922 and 1924. Since then, no fatalities have resulted from the administration of the tetrachlorides. The seven deaths were all among East Indians. One of them occurred after a dose of oil of chenopodium which was not followed by a purge. The others followed the administration of carbon tetrachloride. One of the latter, that of a young boy, was due to a congenital malformation of the intestine, a deformity which would have prevented the patient from living to maturity. Another was that of a woman who was addicted to the use of alcohol. The remainder were among children who were heavily infected with *Ascaris lumbricoides*.

The work of Lamson and his collaborators has shown that poisoning with carbon tetrachloride occurs when there is a lowered blood calcium, irritation or mechanical obstruction by ascarides, chronic or acute alcoholism, or when undigested food is present in the intestinal tract. In no East Indians, other than the alcoholic woman and the boy with a congenital intestinal obstruction, have I observed general symptoms of poisoning after the administration of carbon tetrachloride, except when the patients have harbored ascarides. I make the conjecture, without being able to substantiate it, that there is a relationship between large numbers of ascarides and lowered blood calcium.

The studies and observations on which this paper is based were conducted with the support and under the auspices of the International Health Division of the Rockefeller Foundation.



In patients other than East Indians, carbon tetrachloride has caused few toxic symptoms. Sleepiness occurs rather frequently following treatment, probably as a result of inhalation of the regurgitated fumes of the anesthetic drug. Nurses say that after treatment is given in a native village there is a strange unusual silence for the remainder of the day. Headache of two or three days' duration is occasionally reported, and nausea is not uncommon. The former is probably caused by absorption of the drug, and the latter by the purge that accompanies the drug. Some persons are exultant by the drug. Patients have declared that it affects them like "grog," and I have always suspected that this reputation has made the drug popular with native populations.

Since February, 1922, the dosage of carbon tetrachloride or of tetrachlorethylene, given in the South Pacific, has been 3 minims (0.2 cc) for each year of age, with an adult dose of from 45 to 60 minims (2.8 to 4 cc) in a suitable amount of saturated solution of magnesium sulphate. The routine treatment for East Indians in Fiji since 1924 has been 1 minim (0.06 cc) of oil of chenopodium for each year of age up to 9 years, then 2 minims (0.12 cc) for each year, with an adult dose of 35 minims (2 cc) of a mixture of one part of chenopodium to two or three parts of carbon tetrachloride or tetrachlorethylene.

In 1925, Hall and Shillinger reported the results of their investigation on the anthelmintic properties of tetrachlorethylene, which were found to be approximately the same as those of carbon tetrachloride. They concluded that the drug was about as safe as carbon tetrachloride, that it would probably produce the same lesions, usually an hepatic necrosis healing in one or two weeks, and that it would have the same contraindications. Subsequently tests of tetrachlorethylene were made by several investigators, all of whom seemed to agree that it was less toxic than carbon tetrachloride.

In 1929, Lamson, Robbins and Ward stated, on the basis of experiments with animals, that tetrachlorethylene is less toxic than carbon tetrachloride, that it is absorbed little, if at all, from the intestinal tract, that, if fat is present or if enormous doses of the drug are given, absorption may take place, with toxic symptoms and even with death, but that these symptoms are due to an overdose of an hypnotic and are not secondary to those of liver damage, as is the case in carbon tetrachloride poisoning, that alcohol is not a contraindication to the use of the drug, that no true necrosis of the liver or kidney takes place with doses up to stomach capacity, and that although their experiments were made on animals, and the drug may be absorbed more readily by the human intestine, its effect on animals would indicate that it would cause no pathologic changes in man even if it was absorbed. The results of their work led them to believe that the drug could be used in the treatment of hookworm disease with far greater safety than either oil of chenopodium, which is very dangerous in overdoses, or carbon tetrachloride, which, although it has been taken by large numbers of persons without any symptoms whatever, probably causes a temporary liver disturbance in all cases and may be very toxic in conditions of low calcium balance or when taken with alcohol.

The results of more than 46,000 tetrachlorethylene treatments administered in the South Pacific islands in the past four years under my supervision confirm everything that Lamson conjectured with regard to the use of this drug for human patients. No deaths have

resulted from its use, and it has caused fewer toxic symptoms than any of the other anthelmintics employed.

Dr J. W. Hunt, a senior medical officer of the Fiji Medical Service, who has been a close observer of changes in the method of hookworm control during the past twenty years and who has supervised many thousands of treatments with carbon tetrachloride, and recently more than 3,000 with tetrachlorethylene, remarks on the absence of symptoms from the tetrachlorethylene treatments as compared with the carbon tetrachloride treatments.

Tetrachlorethylene has a more pronounced exhilarating effect than carbon tetrachloride, however. Natives are great actors. After treatment they often stagger down the road to show how drunk they are and how powerful the medicine is, one trying to outdo the other in foolish behavior. In the Solomon Islands, occurrences of this sort were especially numerous following treatment with tetrachlorethylene. One man lay down in front of the crowd after taking the drug and moaned and twisted as if in great pain, although he was all right again in half an hour. Another said that his hands and feet were paralyzed. Small boys ran about pulling up plants. In some instances entire groups behaved as if demented. This was a form of hysteria. The laymen in charge of the treatment units of the Solomon Islands asked permission to return to the use of carbon tetrachloride. This is understandable when one realizes that these men were treating primitive savages in groups of hundreds in jungle villages, where government influence is tenuous, and that they had no protection other than the weight of their personalities.

In the New Hebrides, where there is a similar primitive population, some post-treatment hysteria occurred, but it gave no trouble. Here tetrachlorethylene was highly commended for mass treatments by a layman with fourteen years' experience in treating natives for hookworm disease. After the reports of the trouble in the Solomon Islands, I asked the native medical practitioner in charge of the hookworm unit in Fiji whether he had had any trouble. He stated that he had not, but a few days later he asked for carbon tetrachloride, saying that one old man had gone to sleep following a dose of tetrachlorethylene and then had been silly for a short time afterward. When I questioned him further, he could not tell of any symptoms that were increased by the use of tetrachlorethylene. The reports from the Solomon Islands had worried him. He has since resumed the use of tetrachlorethylene quite cheerfully.

It is true that, in general, tetrachlorethylene is not taken with as much enthusiasm as carbon tetrachloride because of its more pronounced taste and greater anesthetic effect, nevertheless, I consider tetrachlorethylene the most satisfactory anthelmintic thus far developed for hookworm disease.

#### SUMMARY

I report

1 One hundred and fifty thousand consecutive mass treatments of hookworm disease with the tetrachlorides without a death.

2 More than 100,000 consecutive treatments with carbon tetrachloride without a death and with few untoward symptoms.

3 More than 46,000 treatments with tetrachlorethylene without a death and without untoward symptoms.

61 Broadway

THE FEDERAL FOOD AND DRUGS ACT  
AND THE PHYSICIAN

F J CULLEN, MD

Chief Drug Control Food and Drug Administration  
WASHINGTON, D C

In 1906 I was an errand boy and soda dispenser in a drug store in Kokomo, Ind. I was assigned the added task of invoicing all "patent" and proprietary medicines on the shelves of the store, and of writing manufacturers stating the number of bottles or packages of their medicines we had in stock. The manufacturers then furnished me with small stickers to paste on each package, stating the content of alcoholic, narcotic or other drugs required by the new national pure food and drug law to be declared on the labels—also stickers stating, "Guaranteed under the Food and Drugs Act of 1906." These I attached to all packages. That was about the extent of my knowledge of the Food and Drugs Act before becoming associated with the federal Food and Drug Administration, in 1929. Since that date I have questioned numerous physicians and dentists and I find that their knowledge of the functions of the administration is, in most cases, as meager as was my own previous to my present association. I consider it unfortunate that so few people are well informed as to the important functions of this organization.

The federal Food and Drugs Act was drafted by the late Dr. Harvey W. Wiley, with some assistance, and passed by Congress, June 30, 1906, becoming operative, Jan. 1, 1907. The purpose of the law was, and is, to protect the consumer against foods containing added poisonous ingredients which may render them injurious to health, against decomposed or filthy foods, against substandard foods and drugs sold as standard products, and against drugs bearing false and fraudulent therapeutic claims. Enforcement of the measure safeguards the public against debasements and false labelings of all types of foods and drugs. In short, the law is a measure designed to protect both the public health and the public purse. It does not, however, cover those products manufactured and offered for sale within the state of origin but does apply to imported and exported foods and drugs. The law recognizes as legitimate articles of commerce the so-called patent and proprietary medicines which are marketed in compliance with its requirements, and includes such preparations within its scope by the definition of a drug, which is "any substance or mixture of substances used for the cure, prevention, or mitigation of disease." The statute curbs the illegal distribution of drug products by the statement, "the labeling shall not bear false and fraudulent therapeutic claims."

The terms of the law are broad enough not only to apply to foods and drugs intended for human use but also to cover cattle feeds and veterinary remedies. I shall, however, confine this paper to the activities of the Food and Drug Administration directed against those commodities in which the medical profession is especially interested.

The limitation of funds available for enforcement of the act naturally makes it necessary for the Food and Drug Administration to exercise a degree of judgment in the selection of those forms of violation which engage its attention. In general, our energies are directed first toward violations of the law involving both foods and drugs which affect the public health,

secondly, toward offenses against decency, such as traffic in decomposed or filthy foods, and, thirdly, toward economic frauds involving financial cheats. It follows that some less serious forms of violation must, for the time being, be played down because of the limitations of our force and our funds. Most infractions of the law which involve medicinal products have public health significance and hence are listed for first attention. But even in the case of drugs there are variations in the seriousness of offenses making it needful for us to exercise selective judgment in determining the commodities that shall receive most active attention. This selective method results in what is known as the project schedule. This is sufficiently broad in scope to cover all staple commodities and all other products particularly subject to adulteration or misbranding. This does not mean, however, that we do not take action in a case in which we have proof of a violation of the law, regardless of whether that type of product is included in the project schedule or not.

The law provides two methods of procedure in case of violations: section 10 of the act, which provides for seizure action against violative goods, and section 2, empowering criminal prosecution of the manufacturer.

In an action known to us as the Vinegar Case, the United States Supreme Court said in part: "The statute [the federal Food and Drugs Act] is plain and direct. Its comprehensive terms condemn every statement, design and device which may mislead or deceive. Deception may result from the use of statements not technically false or which may be literally true." This statement refers to a food product, but in the case of "Fulton's Compound," a medicine recommended as a treatment for diabetes and nephritis, the court quoted from this decision thereby connecting it with drug products. With such a pronouncement by the highest tribunal as a guide, we cannot feel that we are mistaken in proceeding against proprietaries bearing extravagant therapeutic claims.

In a consideration of therapeutic claims made on the labeling of a "patent medicine," we must consider that medicine's composition in the light of present-day, reliable medical opinion. This opinion is arrived at by consulting the latest standard textbooks of medicine and the specialists best qualified to speak on the subject under observation. It is imperative that we depend on the physician and dentist for material aid in the enforcement of this law. However, our reliance is placed on authoritative, present-day medical and dental opinion. We have found that some physicians and dentists will use certain products of compositions concerning which they have little or no information. Practitioners may be led to the use of the article through highly extravagant advertising claims, some of which are of foreign origin. Dentists and doctors may use the advertised preparations in conjunction with the established methods of treatment with which they are familiar and from which they know what to expect. Unless adequate controls are employed in such combination treatments, the dentist or doctor may credit the highly advertised preparation with results achieved. He may then issue a statement as to the value of the product in the treatment of a certain disease—and such statements are always exaggerated by the manufacturer or distributor of the article. Medical and dental journals justly have condemned the use of drug preparations of questionable composition and remedial value and have denounced the practice of some phy-

or until virulent bacteria gain entrance into the abdominal cavity from the blood stream and, because of the abnormal tendency for fluid to filter from the blood plasma, remain in situ and multiply and cause a fatal peritonitis (in approximately one half of the total number of severe cases)

It is our object in this paper to call attention to the fact that the edema of such severe cases of nephrosis may be controlled by the proper use of acacia, the theory being simply that the "colloidal osmotic pressure" or "oncotic pressure" of the plasma, reduced to the edema zone as a result of diminution in concentration of plasma protein, may be effectively restored by substituting the less permeant hydrophilic colloid acacia for the more permeant albumin fraction of the plasma

It should be mentioned at the outset that the idea of using acacia for this purpose did not originate with us

ADMINISTRATION OF ACACIA

In order to be effective, enough acacia must be given to raise the "oncotic" pressure to beyond the edema zone and maintain it there The "oncotic" or "colloidal osmotic" pressure of normal serum is found to be usually between 35 and 40 cm of water, each 1 per cent of albumin contributing about 7.5 cm of water pressure, and each 1 per cent of globulin about 1.95 cm The serum oncotic pressure (calculated from the albumin-globulin concentrations) of the nephrosis cases observed by us ranged from 5 to 20 cm of water while the edema was either increasing or stationary, the mean for the cases showing increasing edema being about 11 cm of water, while the mean for cases showing stationary edema was 13 cm On the other hand, cases showing spontaneous diuresis with loss of edema had values lying between 13 and 21 cm of water, averaging

TABLE 1—Results of Administration of Acacia

Case *	Serum			Dose of Acacia		Oncotic Pressure (Calculated)*		Effect on Edema
	Albumin, Gm per 100 Cc	Globulin, Gm per 100 Cc	Acacia, Gm per 100 Cc	Date	Gm per Kg Ideal Body Weight	Before Acacia		
						Cm H <sub>2</sub> O	After Acacia Cm H <sub>2</sub> O	
1 Ruth B Aged 5 years Ideal weight, 18.6 Kg	0.76 0.77 (0.77)	2.05 2.32 (2.32)	(0.0) (1.5) (0.0)	2/11/30 2/17/30 3/ 7/30	1.0† 1.0† 1.6	9.7 13.0 10.3	17.7 23.9 18.3	Diuresis with loss of 2 lbs in 3 days Diuresis with loss of 2 lbs in 3 days Diuresis with loss of 2½ lbs in 4 days
2 Laverne P Aged 2 years Ideal weight, 14 Kg	0.27	4.21	(0.0)	7/ 9/30	2.1†	10.2	23.4	No diuresis or weight loss
3 Ernest T Aged 3 years Ideal weight, 15 Kg	0.75 0.67 (0.67) 0.73 (0.63) 0.93 (0.93)	3.02 2.34 (2.34) 2.92 (2.00) 2.00 (2.00)	(0.0) (1.5) (4.1) (6.1) (0.0) (1.7) (3.2)	2/18/31 2/20/31 2/24/31 2/26/31 3/17/31 3/18/31 3/21/31	1.0† 2.0† 2.0† 1.0† 1.0† 1.0† 2.0†	12.7 12.5 20.7 31.3 10.9 14.1 18.7	16.7 26.9 30.6 41.2 14.9 20.5 35.9	No diuresis Diuresis with loss of 3 lbs in 5 days Diuresis with loss of 1¼ lbs in 2 days Diuresis maintained No diuresis Diuresis with loss of all remaining edema Diuresis maintained without recurrence of edema
Aged 4 years Ideal weight, 20 Kg	0.88	1.82	4.9	3/24/31	2.0†	24.8	44.9	Diuresis maintained without recurrence of edema
	0.95	2.30	(0.0)	9/ 1/32	1.5	11.0	18.8	Diuresis for 3 days no weights (patient ill with erysipelas)
	0.14	2.32	1.07	9/ 6/32 9/ 9/32	1.5 1.5	8.6	13.5	Diuresis for only 1 day Diuresis with loss of 10½ lbs in 4 days (all of remaining edema)
4 Becky W Aged 13 years Ideal weight, 37.5 Kg	1.28 (1.28) 0.78 (0.78)	2.73 (2.73) 1.66 (1.66)	0.0 (0.8) 2.24 (1.9)	7/13/32 7/15/32 7/17/32 7/26/32 7/31/32	0.5† 1.2† 0.8 0.7 0.8	14.9 16.1 13.8 12.9	16.5 22.4 18.6 18.1	No diuresis Diuresis with loss of 5½ lbs in 2 days Diuresis with loss of 6 lbs in 5 days Diuresis with loss of all recurrent edema Diuresis with loss of all recurrent edema
5 Bernice R Aged 7 years Ideal weight, 25 Kg	0.64 (0.64) 0.68 0.77 0.08	4.49 (4.49) 2.56 3.41 2.73	(0.0) (2.4) 1.67 (0.0) 1.57	7/16/32 7/17/32 7/22/32 9/ 2/32 9/ 8/32	1.4 1.1 1.4 1.4 2.8	14.3 19.6 13.4 12.6 8.7	20.8 27.6 22.7 10.0 33.7	No diuresis Diuresis with loss of 8 lbs in 6 days Diuresis with loss of 5½ lbs in 5 days (all of remaining edema) Diuresis with loss of 2 lbs in 4 days (all of recurrent edema) Diuresis with loss of 2½ lbs in 4 days (all of recurrent edema)

\* Albumin globulin effect calculated by Govaerts formula. Acacia effect calculated with aid of Krogh's data. Its effect in increasing plasma volume not considered. Values in parentheses assumed.  
† Acacia containing hypertonic sodium chloride solution

To our knowledge, it was first used by Clausen, in 1920, with encouraging but not brilliant results in two cases in the wards of the St. Louis Children's Hospital. In his monograph, Leiter<sup>2</sup> says

Artificial increase of the colloid osmotic pressure of the plasma by blood transfusion, infusion of gum acacia and similar substances has been suggested and tried without significant results. The theory is plausible enough but practical effects are bound to be disappointing because the amount of plasma protein or other colloid injected is hardly enough to produce a significant rise in colloid osmotic pressure, in view of the limitations imposed by the capacity of the patient's circulatory system in regard to total plasma volume, and also because the glomerular capillaries are much more permeable than normally to colloids, so that they do not remain long enough in circulation.

Our feeling at present is that failure to relieve nephrotic edema with acacia has been almost entirely due to the fact that not enough has been given.

17 cm. From these figures it will be noted that the amount of oncotic pressure necessary to be supplied to establish diuresis varies from a fraction of 1 cm to 15 cm and averages 6 cm. Since acacia exerts approximately from 1.6 to 3.5 cm pressure per gram per hundred cubic centimeters,<sup>4</sup> it follows that, while a 2 per cent acacia concentration in the plasma should generally be effective, occasionally as much as 6 per cent or more may be required.<sup>5</sup> Actual experience has proved that to be the case, and our present method is first to administer acacia in an amount sufficient to add about 2 or 3 per cent to the entire plasma volume. If no diuresis occurs in twenty-four hours, the dose is

3 Govaerts P. Compt rend Soc de biol 93:441 (July 17) 1925.  
4 Krogh August. The Anatomy and Physiology of Capillaries, Yale University Press, 1929.  
5 According to Krogh's<sup>4</sup> curve of the oncotic pressure of acacia solutions of different concentrations, the oncotic pressure increase with concentration is considerably more than proportional. Thus a 3 per cent solution exerts about 7.3 cm water pressure, while a 6 per cent solution exerts about 21.2 cm.

repeated one or more times. Later, when the diuretic effect has ceased, owing to loss of acacia by excretion into the urine, it is repeated in the same dosage.

Although the exact concentration of acacia in the plasma can be determined quite accurately, such determinations are unnecessary for therapeutic purposes, and the approximate concentration can be calculated on the assumption that the acacia mixes only with the plasma, the value of which is approximately 50 cc per kilogram of ideal body weight. In other words, in order to establish an acacia concentration of 2 per cent in the plasma, 1 Gm per kilogram of body weight (ideal) is necessary.

The first acacia we used was made by us according to the method described by Erlanger and Gasser.<sup>6</sup> More

For some reason as yet unknown to us, acacia made without the addition of salt tends to become darker in color, and occasionally a precipitate develops. Such a product is likely to cause considerable reaction after injection, chills, fever and vomiting being the most marked symptoms. The light yellow, perfectly clear product causes little or no reaction, aside from transient headache and occasional vomiting, unless the material is injected too rapidly. In such instances an uncomfortable feeling of warmth and thirst and more severe headache develop during the injection.

Acacia begins to appear in the urine immediately after injection. The rate of excretion seems to vary considerably in different individuals. The average excretion is about 25 per cent during the first two days and

TABLE 2—Results in Case 6\*

Period	Date	Edema	Body Weight, Pounds	Serum				Oncotic Pressure (Calculated) Gm H <sub>2</sub> O	Urine Volume, Ce.	Urine Protein, Gm	Casts
				Protein Gm per 100 Ce	Albumin Gm per 100 Ce	Globulin Gm per 100 Ce	Acacia Gm per 100 Ce				
Control period								16.0	200	++++	Many
Diet high protein (10 Gm per pound ideal weight)	9/24/31	Generalized edema and ascites	31½	4.8	1.2	3.6	(0.0)				
Total fluids 1000 cc	9/28/31	(stationary)	31½							3.1	Many
Protein shock therapy (mixed streptococcus vaccine intravenously)	9/28/31 to 10/10/31	Edema increasing	31½								
Blood transfusions (filtrated whole blood 200 cc)	10/10/31	Generalized edema and ascites no change	34½					16.9	208	5.2	Many
Filtrated whole blood, 200 cc	10/11/31	until 10/22/31	34½	4.1	1.6	2.5	(0.0)				
Acacia administration											
Before 50 cc 30% acacia containing 4.5% sodium chloride	10/21/31		34½	4.8	0.8	4.0	(0.0)	13.8			Many
Three hours after acacia	10/21/31			3.1	0.6	2.5	1.50	{18.4			
	10/22/31	Face free	32					{12.11	915+		
	10/23/31	Less generally	28						580+		
	10/24/31	Legs free	26½						405		
	10/26/31	Ascites (?) only	24½						310+		
	10/27/31	Lids puffy in a m	25	3.9	0.5	3.4	(1.0)	12.0	330+	2.2+	
	11/ 3/31	Lids puffy in a m	26¼	4.0	0.8	3.1	(0.3)	12.0	295	3.8	
	11/11/31	Lids puffy in a m	26	4.1	1.6	2.5	(0.0)	10.6	825		
Before 20 cc 6% acacia containing 0.9% sodium chloride	11/13/31	Lids puffy in a m	26¼	(4.1)	(1.6)	(2.5)	(2.3)	21.2	305		
Three days after acacia	11/16/31	Ascites (?) only	26¼	4.0	1.1	2.9	0.3	13.01	340		None
	11/20/31	Slight and variable	26½	3.8	1.5	2.3	(0.0)	15.8	390	2.0	
Blood transfusions (Whole blood, 200 cc)	11/20/31	Ascites (?) lids puffy	26½						675		
Plasma 100 cc	11/30/31	Ascites (?) lids puffy	27	4.0	1.5	2.5	(0.0)	16.1	450+	5.7+	
	12/ 6/31	No edema	28						405	3.8	
Period of recovery	12/ 7/31	No edema	27½	4.4	1.0	2.8	(0.0)	17.4	410		
	12/12/31	No edema	28						425	3.0	
	12/14/31	No edema	28½						385+	4.1+	
	12/15/31	No edema	28½						380	2.3	
	12/16/31	No edema	28						335	3.6	
	12/19/31	No edema	28½						405+	2.1+	
	12/20/31	No edema	28½						295	2.7	
Discharged from hospital	12/21/31	No edema	28½	4.3	1.7	2.6	(0.0)	17.8	870		
	12/31/31								382	4.2	None
	1/ 5/32								480	4.8	None
	1/14/32								293	3.2	None
	1/27/32								640	3.5	None
	2/13/32								372	0.0	None
	3/13/32								490	None	None
	10/10/ 1		30	7.20	5.30	1.00	0.0	44.2		None	None

\* Windell K. aged 2 years whose ideal weight is 14 kg (31 pounds)

† Calculated as described in table 1

‡ Calculated from observed concentrations of albumin, globulin and acacia after dilution of plasma

recently we have used material supplied by Eli Lilly & Co. We have noted equally good results from the product generally marketed (30 per cent acacia containing 4.5 per cent of sodium chloride) and from special products made for us without the addition of salt or with the addition of only 1 per cent of salt. We have injected the material in concentrations ranging from 6 to 30 per cent. Perhaps the best method is to dilute the original 30 per cent solution with equal parts of distilled water (Ringer's if the original preparation is salt-free), and inject it intravenously, slowly by gravity.

60 per cent during the first seven days. The highest concentration noted in the urine was about 13 per cent. It may be detected in both blood and urine as long as from ten to fourteen days after injection. Compared with plasma albumin, acacia is evidently considerably less permeant as far as the kidney is concerned. In the more severe cases, however, the rate of excretion is rapid enough to necessitate repeating its administration every three or four days in order to maintain an effective oncotic pressure in the plasma.

#### RESULTS OF THE ADMINISTRATION OF ACACIA

During the last two and a half years, we have given twenty-seven injections of acacia in six different cases of lipoid nephrosis. The results are presented in the

<sup>6</sup> Erlanger I. and Gasser H. S. Hypertonic Gum Acacia and Glucose in the Treatment of Secondary Traumatic Shock, Ann Surg 49: 129 (April) 1919

tables The cases were selected for acacia therapy in all instances only after a preliminary trial of high-protein feeding with salt and water restriction failed to result in diuresis With the exception of case 5, transfusion had been performed in all the patients and with the exception of patients 5 and 6, they had received various types of diuretics, including theobromine sodium-salicylate and salyrgan, without effect To conserve space, the preliminary control observation and treatment is recorded in detail in only one instance (table 2)

It will be noted that in five of the six cases diuresis followed the administration of acacia whenever the amount given was sufficient to bring the oncotic pressure of the serum to between 13 and 21 cm of water, the zone found previously necessary for spontaneous diuresis In the last four cases, the administration of acacia was continued long enough to rid the patients completely of edema In the single failure (case 2), one of our earliest cases, only one injection was given This patient had an extremely low plasma albumin concentration (0.27 per cent) and was given 2.15 Gm of acacia per kilogram of ideal body weight, enough, according to our calculations, to bring the oncotic pressure to 23.4 cm of water No diuresis or loss of weight followed, although the extremities looked less edematous the following day Recent observations tend to explain this failure When the initial plasma albumin concentration is very low, and the amount of edema very extensive, the administration of acacia is followed by an increase of blood volume, amounting in some instances to from 25 to 40 per cent The effect of such an increase in total plasma volume would, of course, be to dissipate the effect of acacia in raising the oncotic pressure It seems quite possible to us that, instead of there being 23.4 cm of water pressure after injection, there may have been considerably less than 20 cm In this connection it should be emphasized that the calculated values for oncotic pressure cannot be more than approximations and are probably a little high As Krogh<sup>4</sup> and others have shown, the effect of dilution of plasma protein and acacia is such that the more dilute solutions exert relatively smaller pressures We were able to make allowance for this effect only as far as acacia was concerned, assigning the constant values of Govaerts<sup>3</sup> to both albumin and globulin It should likewise be noted that, in cases 3, 4 and 5, the first injection of acacia also fell short of raising the oncotic pressure above the edema zone, but in all three instances a second injection, given within an interval short enough to permit accumulative effect (from one to two days), initiated almost spectacular results

Similar results have been obtained in the type of "nutritional" edema that develops in infants after a protracted period of inadequate food intake and absorption, due to vomiting and diarrhea (the edema developing and often supplanting dehydration immediately after cessation of vomiting and diarrhea) In this type of edema, however, equally prompt results have been obtained by blood transfusions plus adequate protein intake In the active stage of chronic hemorrhagic (glomerular) nephritis, results have been more variable and in general not nearly so striking This we attribute chiefly to the diminished filtration capacity of the kidneys, due to glomerular destruction and impairment of circulation

Although our experience is as yet too limited to justify such a conclusion, it would seem to us that the use of acacia offers more than just the relief of otherwise intractable edema With the establishment of

diuresis in cases 3 and 6 the renal lesion promptly improved, the casts soon disappearing and albuminuria diminishing so that restoration of plasma protein concentration to beyond the edema zone quickly resulted Patient 6 seems to have made a complete recovery, improvement dating from the administration of acacia, while patient 3 remained edema-free and almost free from albuminuria for a year and a half, following acacia therapy Similar but more temporary improvement was noted in cases 4 and 5 It is also possible that, with the use of acacia during the time that ascites tends to accumulate there will be less tendency for bacteria to enter the abdominal cavity and remain and multiply there

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## CHOLESTEROL CRYSTALS AND "CALCIUM BILIRUBINATE" GRANULES

THEIR SIGNIFICANCE IN BILE OBTAINED THROUGH THE DUODENAL TUBE

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This report of the results of an investigation of 100 patients is a confirmation and, to a degree, an elaboration of previous work of Bockus and his collaborators,<sup>1</sup> Jones<sup>2</sup> and others It scarcely seems necessary to emphasize the importance of the earlier observations of Meltzer<sup>3</sup> and Lyon,<sup>4</sup> which were made more than ten years ago The diagnostic value of duodenal drainage was verified in each case in our series by examination of the gallbladder and its contents at operation and later by gross and microscopic studies made in the department or surgical pathology

### METHOD

The method advocated by Lyon has not found general acceptance, largely on account of the difficulty and the uncertainty of entering the duodenum This, we believe, can usually be overcome by the following simplified technique

After a fast of at least six hours the patient is placed in the supine position on a horizontal fluoroscopic table An ordinary duodenal tube with an Einhorn tip is stiffened with wire and inserted into the cardiac orifice of the stomach The position of the tube is checked with the fluoroscope at intervals through its passage into the duodenum After the tube has entered the cardia, the wire is withdrawn for about 2.5 cm and the patient is turned on the right side The tube is now passed to the pylorus The wire is further withdrawn to a point about 5 cm from the tip After from three to fifteen minutes and with the aid of gentle manipulation, the flexible end of the tube is carried through the pylorus by peristaltic action into the second part of the duodenum The wire stylet is now completely withdrawn and the fasting contents of the duodenum are removed by aspiration This requires only a

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This paper has been abbreviated by the omission of tables which include roentgen and pathologic data These may be found in the authors' reprints

1 Bockus, H. L., Shay, Harry, Willard, J. H., and Pessel, J. F. Comparison of Biliary Drainage and Cholecystography in Gallstone Diagnosis J. A. M. A. 96: 311 (Jan. 31) 1931

2 Jones, C. M. The Rational Use of Duodenal Drainage, Arch. Int. Med. 34: 60 (July) 1924

3 Meltzer, S. J. The Disturbances of the Law of Contrary Innervation as a Pathogenetic Factor in the Diseases of the Bile Ducts and Gall Bladder Am. J. M. Sc. 153: 469 (April) 1917

4 Lyon, B. B. V. Diagnosis and Treatment of Diseases of the Gallbladder and Biliary Ducts J. A. M. A. 73: 980 (Sept. 27) 1919

few minutes. Fifty cubic centimeters of saturated magnesium sulphate solution is then injected and after from three to five minutes gentle aspiration is begun and continued for sixty minutes, unless concentrated gallbladder bile is obtained before then. The procedure is frequently completed in twenty minutes and seldom requires more than sixty minutes. The bile-containing fluid is centrifugated as soon as possible at 2,000 revolutions per minute and the sediment examined with a magnification of 600 diameters.

If stones are present in the gallbladder and the cystic duct is patent, cholesterol crystals or amorphous bile pigment granules or both are usually found. The granules are said to consist of calcium bilirubinate, though no convincing proof of this is to be found in the literature. It is important to note that cholesterol crystals and pigment granules may be found in light colored fluids, the so-called A bile, as well as in the concentrated B bile. This is due to the admixture of a small quantity of gallbladder bile with liver bile and duodenal contents.

Certain details are worthy of mention. The rubber tubing that we used had an internal diameter of 3.5 mm, its wall was about 1 mm thick. The wire is known as number 11 gage piano wire. To prevent passage of the wire through the fine perforations of the Einhorn bucket, a small ovoid bead of lead is soldered to one end of the wire. The latter must be carefully lubricated with a water soluble lubricating jelly before it is introduced into the tube. A 20 cc luer syringe is used for the introduction and aspiration of fluids. The injection of air through the tube at intervals is helpful to free its end.

Drainage may be preceded by administration of sedatives and the cocainization of the pharynx. Though we have had only slight experience with these procedures, their use may be advantageous in nervous patients.

The microscopic appearance of cholesterol crystals is characteristic and illustrated in the accompanying photomicrograph. The identification of the bile pigment granules requires considerably more experience, as they may be confused with bile-stained detritus. They are irregularly shaped and vary from yellow to orange.

#### RESULTS

In the subsequent discussion, for the sake of accuracy, we use the terms dilute and concentrated rather than A and B bile. Cholecystograms were taken after oral administration of the dye.

**GROUP 1—Patients yielding dilute bile without crystals or pigment granules.** There were twenty-nine cases in this group. Sixteen presented definite obstruction of the cystic duct or the outlet of the gallbladder, three had thick and shrunken gallbladders, and one had a strawberry gallbladder without stones. In the nine remaining patients there was no anatomic reason to explain the failure to recover bile from the gallbladder. Our experience, which coincides with that of other workers, has convinced us that it is necessary to make several attempts to obtain gallbladder bile. Failure to do so after several trials does not by itself warrant a diagnosis of organic disease of the gallbladder though an obstruction of the duct system or inability of the bladder to empty is probable.

**GROUP 2—**In this group of seven patients, only colorless duodenal contents were aspirated though the end of the tube was definitely in the second part of the duodenum. At operation, all the patients had an obstruction of the common bile duct by calculus or neoplasm.

**GROUP 3—Patients yielding concentrated gallbladder bile free of crystals or pigment granules.** Of the thirteen patients in this series, ten had no stones at operation, of these, two had a strawberry gallbladder (cholesterosis). In one of these the gallbladder bile at operation was also free of crystals. Of the three remaining patients, one had pure pigment stones, as shown by quantitative analysis. The gallbladder bile at operation showed neither crystals nor bile pigment granules. Chemical examination of the bile revealed no deviation from the normal except an unusually high cholesterol content. This exceptional finding affords definite evidence that pigment stones may occur without apparent chemical or microscopic change in the gallbladder bile. The incidence of pigment stones is fairly rare about 2 to 3 per cent of all stones. The absence of cholesterol crystals or bile pigment granules in gallbladder bile obtained through the duodenal tube usually signifies no stones.

From another patient in this group a very concentrated gallbladder bile was obtained through the duodenal tube. Its cholesterol content, determined by the accurate Windaus method, was found to be almost identical with that of the bile obtained from the gall-



Bile sediment showing cholesterol crystals and a clump of calcium bilirubinate pigment reduced from a photomicrograph with a magnification of 800 diameters.

bladder at operation. We were stimulated by this result and consider it, together with our further experience, as conclusive evidence that the gallbladder can evacuate its contents during intubation.

**GROUP 4—Patients with cholesterol crystals or bile pigment granules in the bile.** This group comprises fifty-one cases, in which forty-four presented cholesterol crystals, seven bile pigment granules, and nine both. Bile pigment granules are seen much less frequently than cholesterol crystals. We feel that it requires considerable experience to be certain of their identity. Recently it was shown that the majority of gallstones contain about 96 per cent of cholesterol<sup>5</sup> therefore the predominance of cholesterol crystals in gallbladder bile from cholelithiasis cases was rather to be expected. Pure pigment stones may be suspected if pigment granules only are found in considerable quantity.

Gallstones were found in all but four cases of this group. Of these four patients, three had strawberry gallbladders without stones and in the other there was

<sup>5</sup> Pickens M. Spanner G. O. and Bauman Louis. The Composition of Gallstones and Their Solubility in Dog Bile. *J. Biol. Chem.* 95: 505 (March) 1932.



a fistula between the gallbladder and the duodenum. This patient had passed a stone by the rectum seventeen years before, and in this case cholesterol crystals were found in the bladder bile at operation.

#### CONCLUSIONS

1 The improved technic as described places this test on a practical routine laboratory basis.

2 The absence of crystals or pigment in dilute bile (so-called A bile) or the failure to recover B bile is not conclusive evidence of pathologic changes of the gallbladder or the absence of stones.

3 The absence of crystals or pigment granules in concentrated (so-called B) bile is fairly strong evidence against the presence of stones.

4 The finding of crystals or bile pigment granules in dilute or concentrated bile almost certainly indicates the presence of gallstones.

Finally, it may be said that the combined clinical, roentgen and duodenal drainage studies make the diagnosis of biliary tract disease more accurate than ever before.

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### TRAUMATIC PERIPHERAL NERVE INJURIES

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Our purpose in this communication is to invite attention to the increasing frequency of peripheral nerve injuries as the result of automobile accidents. Lacerated wounds caused by flying glass frequently produce scars that contract and impinge on important nerve trunks. The resulting paralysis simulates closely division of the involved nerves. The following case is illustrative of the difficulties of diagnosis in cases of constricting scars and the brilliant results obtained by liberation of the compressed nerve trunk.

**History**—Mrs. J. R., aged 27, admitted to the hospital, May 9, 1932, had suffered a severe laceration of the right forearm in an automobile accident seven months previously. There is no definite information as to whether the disability came on immediately or began at a later date. The wound was immediately repaired and the arm put in a cast. On removal of the cast she first recognized her inability to use her hand. The condition had remained stationary since that time.

**Examination**—There was a circular scar from 7 to 8 inches (18 to 20 cm.) in length and 0.5 cm. in width, extending from the external condyle of the humerus across the anterior aspect of the forearm to the junction of the middle and upper thirds and along the medial border of the ulna. There was a marked wrist drop, and the patient could not extend the hand. The scar had contracted, causing a depression over the dorsal aspect of the forearm and suggesting division of soft tissues. The wrist was carried at a 90 degree flexion. Supination was impossible, abduction and adduction of the fingers were limited, abduction and extension of the thumb were limited. There was a loss of pain and touch sensation along the distribution of the radial nerve and disturbed sensation along the lateral border of the little finger. The elbow could not be extended beyond 150 degrees.

Neurologic consultation confirmed the preceding observations and also showed that there was a faradic response of the ulnar and medial nerves but none of the radial. The right brachioradialis did not react to faradic stimuli. There was no definite

reaction to galvanic stimuli in the radial nerve. The radial periosteal reflex on the right was negative, on the left positive. The right triceps reflex was minus, the left, plus. The right and left biceps reflexes were positive.

The diagnosis made was scarring around the radial nerve and division of the extensor muscles.

**Operation**—The patient was operated on, May 21. An incision was made around the old scar, which was excised. The soft tissues were found to be entirely intact. The radial nerve was located and found embedded in dense fibrous tissue. It reacted normally to electrical stimuli. The nerve was completely freed above and below and the wound closed without drainage.

**Results**—Within a day after the operation the patient began to notice a return of sensation and function. By the date of discharge, May 27, all movements of the hand and fingers were possible, although strength had not completely returned. This improvement has continued, until at present there is practically no disability. A communication received three months after operation stated that complete control of each finger and wrist had been achieved, with the ability to play the piano. There is still some loss of complete extension at the elbow joint.

A review of the literature and reports of cases as far as available at the Cook County Hospital show the necessity of open operation and careful removal of the scar with freeing of the involved nerve trunk in those cases in which the nerve has not been divided. In the cases in which the nerve has been divided, careful end-to-end anastomosis when possible is advocated, or, in cases in which a portion of the nerve trunk has been destroyed, some form of plastic neurorrhaphy or splicing. In those instances in which the distal portion of the nerve is embedded in scar tissue and is difficult to identify, the use of the electric current for identification of the distal portion of the nerve is of the greatest help.

In our cases no attempt has been made to surround the involved nerve trunk with a sheath of fibrous or fatty tissue, although under certain circumstances this may be advisable. The freed nerve trunk was simply dropped back into the wound. Electrical stimulation and physical therapy were begun early and persisted in.

In addition to our cases, ten histories were found at the county hospital of paralysis of the peripheral nerves due to scar pressure. Of these, six involved the radial, two the ulnar, one the median, and one the peroneal. All the patients recovered following the removal of the pressure by the scar. Return of function varied from a few hours to two weeks. In all cases of peripheral nerve palsies of traumatic origin, the surrounding cicatricial tissue should be removed at an early date and physical therapy instituted.

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**Research in Therapeutics**—The past century has been in the main an era of aetiology and diagnosis, the coming century bids fair to be an era of therapeutics. For taking a worthy part in the advances that are certain to be made in the treatment of disease we are in this country none too well organized. We need more laboratories adequately equipped for research in pharmacology and chemotherapy, subjects which will play an increasingly important part in the advance of therapeutics proper. We need more researchers and more careers open to them. Both in teaching and in investigation more attention must be paid to the assessment of the remedial value of drugs in man. Advance in the treatment of disease might be facilitated by having at least one hospital definitely devoted to research in therapeutics and by the creation of a specialized bureau and library for collecting and disseminating the knowledge of these subjects.—Gunn, J. A. *Remarks on the Outlook of Research in Therapeutics, Brit. M. J.* 2:392 (Aug. 27) 1932.

## Clinical Notes, Suggestions and New Instruments

### ALOPECIA OF BEARD FOLLOWING PHRENICECTOMY

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This case is reported because of the unusual complications following a phrenicectomy. A Horner's syndrome followed an attempt to cause paralysis of the diaphragm on the right side, as manifested by a narrowing of the palpebral aperture and miosis. This was later followed by an alopecia of the beard along the submaxillary space.

A white man, aged 36, a farmer, who had had spinal meningitis in infancy, without complications or sequels, stated that in 1918 he caught cold easily, had a persistent cough with increased sputum weakness and dyspnea on exertion, and lost 20 pounds (9 Kg). In 1920 he had pleurisy on the left side. A diagnosis of colitis with some evidence of ulceration, possibly tuberculosis, was made in 1930, after examination with the sigmoidoscope. Previously he had been in and out of many government hospitals for treatment of pulmonary tuberculosis.

In October, 1930, Dr. E. J. O'Brien did a right phrenicectomy with blunt dissection down to the scalenus. The phrenic nerve was found crossing the inner border of the scalenus muscle, injected, severed, and 15 cm. was removed. A small accessory was found off the fifth root. This was severed and the wound



Area of alopecia on right lower jaw and adjoining portion of neck.

closed. Roentgenograms showed a rise of the right diaphragm up a rib and an interspace. There followed considerable clearing of the lung field and clinical improvement.

A fluoroscopic examination in January, 1932, showed the diaphragm mobile and it was decided to reoperate for an accessory phrenic nerve. In February an opening was made through the old incision and the scalenus muscle was approached by blunt dissection. The scalenus was entirely freed but no nerve was found in either direction. Further search revealed a small nerve in the fascia under the medial retractor and this was severed. The diaphragm was still found to be moving and further search through the fascia at the inner border of the scalenus revealed another fair sized nerve. The right diaphragm continued moving synchronously with the left.

The next day the patient was observed to have developed a Horner's syndrome or sympathetic ophthalmoplegia as manifested by a narrowing of the palpebral fissure and miosis with some congestion of the conjunctiva. Subsequently he noted a burning sensation along the inner border of the nose, the cheek and the right half of the upper lip. These sensations lasted about two months.

About one week after the operation he noticed a spot along the right lower jaw and adjoining portion of the neck where the

beard was absent. At this time, August, 1932, it is an oval area measuring approximately 4 by 3 cm.

Five months subsequent to operation, enophthalmos and miosis have disappeared and a few hairs are scattered over the area of alopecia. There is apparently no hypotonia, heterochromia or hemiatrophy of the face as first described by Horner in 1869 and later by others.

Most dermatologists credit alopecia as having a trophoneurotic origin at times. Highman in 1921 said that all efforts to prove it the result of a local or general infection have failed. Sutton in his textbook states that he believes it due to ganglionic injury following trauma or infection. Pusey in his textbook on dermatology states that in favor of the trophoneurotic origin of some of the cases are the experiments of Joseph and others in which the excision of the second cervical ganglion was followed by the appearance of bald patches in the areas of distribution of the second cervical and the auricular and occipital nerves. Areas of baldness have also been observed by Pontoppidan and Bender after operations involving the nerves of the neck.

American Legion Hospital

### REMOVAL OF SUBOCCIPITAL MENINGOCELE WITH CURE

O. H. FULCHER M.D., WELCH, W. VA.

This case is reported because of its rarity and because of the fact that a cure of the patient was effected.

A white baby, aged 5 months, was brought to the office by its mother, March 17, 1932, who gave the following clinical history. She had noticed a lump in the suboccipital region of the infant when it was only a few days old. This lump had gradually increased in size until it had become as large as the child's head. During the preceding two weeks the child had vomited after each feeding, and it had lost weight. She had taken the child to several doctors, who had given her no hopes for cure. The baby was poorly nourished and markedly dehydrated. It weighed 9 pounds (4 Kg). There was a huge suboccipital meningocele about the size of the child's head. The coverings of the meningocele were sufficiently thin to permit transillumination easily. The tension within the meningocele appeared to be great and the anterior fontanel was bulging. However, pressure on the meningocele caused the fontanel to bulge more, thus indicating communication. Leukocytes numbered 11,000 to the cubic millimeter of blood. A specimen of urine could not be obtained.

Operation was carried out immediately under ether anesthesia. A plastic flap was made about the base of the meningocele. The depth of the incision was extended to the dura. At this point it could be determined that the bony defect of the occipital bone extended into the foramen magnum. Careful palpation seemed to indicate that the communicating base of the meningocele contained only spinal fluid. The base of the meningocele was then clamped by two straight forceps, one above and one below, the lower clamp extended across the stump except for about a centimeter. The upper clamp was applied to close this small opening to prevent sudden loss of the spinal fluid, and the base was divided with a knife. Examination of the excised meningocele revealed that there was no brain tissue. The upper clamp was then partly released and immediately spinal fluid spurted from the incision. The clamp was closed again quickly to prevent shock resulting from the sudden release of the intracranial pressure. The dura was then closed with number 1 chromic catgut by over and over sutures and tightened as the clamps were removed. This row of sutures was then inverted by interrupted mattress sutures, number 1 chromic catgut being used. Four strands of number 1 catgut were introduced through the dura and tied and the long ends were placed subcutaneously leading into the cervical region. It was hoped that this would gradually drain the spinal fluid and thus decrease the intracranial pressure. The scalp was closed with silk worm sutures.

The infant appeared to receive very little shock from the operation. The mother took the child from the hospital on the second day, against my wishes. At that time the fontanel was not so tense as it had been. March 25, the infant was returned to the office, it had gained 2 pounds (0.9 Kg.) since the operation, its skin was moist but there was a small leak

From Grace Hospital

of spinal fluid from the incision. The mother stated that there had been no vomiting during the past week. April 1, the wound had completely healed, so the silkworm sutures were removed. A spinal puncture at this time showed free communication between the ventricles and the subarachnoid space of the spinal cord. At this time the child weighed about 12 pounds (5.4 Kg). The infant was seen for the last time, June 6.

Suboccipital meningocele is a condition that is rare. Usually the treatment has been quite unsatisfactory. This is the first case, to my knowledge, that a suboccipital meningocele has been successfully treated by a one-stage operation. Livingston<sup>1</sup> treated one case successfully by a two-stage operation.

#### ACCIDENTAL TRANSMISSION OF SYPHILIS BY BLOOD TRANSFUSION

CHARLES D. POST, M.D., AND GERALD C. COONEY, M.D.  
SYRACUSE, N. Y.

Professor of Clinical Medicine and Instructor of Medicine, Respectively,  
Syracuse University College of Medicine

The use of blood transfusion as a therapeutic measure in an ever widening variety of disease conditions is increasing constantly. With the more frequent use of blood transfusion, the opportunity for the accidental transmission of syphilis naturally increases. The listed cases of infection in this manner is not large, but it is quite possible that for obvious reasons many instances in which this accidental infection occurs are withheld from publication.

In 1917 in his book on blood transfusion, Bernheim<sup>1</sup> reported the first case of transmission of syphilis from donor to recipient. In this case a son transmitted syphilis to his father, who was suffering from pernicious anemia. It is possible that the son knew that he had the disease, since he refused a Wassermann test. Unfortunately, his father's condition became so critical that he was used as the donor with the result that his father contracted syphilis.

Spillmann and Morel,<sup>2</sup> in 1926, reported an interesting and unusual case in which a physician offered his services as a blood donor to a woman who was in immediate need of blood transfusion because of uterine hemorrhage. It was a difficult transfusion and during the procedure the cannulas had to be removed and cleaned. Apparently in being reinserted, the cannulas were interchanged, as the physician had a syphilitic rash two months later. The recipient of the blood died, but it was proved that her husband was syphilitic.

In 1931, Polayes and Lederer<sup>3</sup> reviewed the preceding cases with eight others in the literature. They added a case of their own in which a child, aged 17 months, was given 150 cc of blood and in three and one-half months had a syphilitic rash and gave a positive Wassermann reaction. The parent's Wassermann reactions were negative. A professional donor had been used who could not be identified. The donor's bureau admitted that a donor had been disqualified because of a positive Wassermann reaction about the date of transfusion.

Gougerot and his co-workers<sup>4</sup> reported two cases and Hudelo added a third in which syphilis was transmitted accidentally in blood transfusions given for rejuvenation.

Surgeons are well aware of the possibility of the transmission of syphilis in this manner and in professional donors insist on negative Wassermann tests. However, this precaution is often waived when the donor is a relative or a friend and the need of blood is urgent. Fully as important as the Wassermann test should be the complete physical examination of the prospective donor to ascertain whether evidences of syphilis are present. McNamara<sup>5</sup> has shown that the transfused blood of persons with tertiary syphilis do not transmit the disease, so evidently the danger lies in the use of blood from syphilitic patients in the early stage of the disease. As the Wassermann test is often negative in the earliest stages of syphilis such a

negative test is not in itself sufficient precaution without a thorough examination for further evidences of syphilis.

Even with the reassurance of both a negative Wassermann reaction and a negative physical examination, however, there is an interval before the development of the primary lesion when *Spirochaeta pallida* has invaded the blood stream and is susceptible of being transmitted by blood transfusion.

The following case seems to be of this kind.

#### REPORT OF CASE

A white girl, age 14 years, was admitted to St. Joseph Hospital, Oct. 6, 1931, with a cellulitis of the face of six days' duration, which started with a furuncle of the lip which the patient squeezed. Shortly afterward the onset of chills and fever confined her to bed. The day before she was admitted, a cough developed accompanied by sharp pain in the right side of the chest and accelerated respiratory movement. Her condition became alarming and she was sent to the hospital.

She was admitted in a septic condition and appeared critically ill. The physical observations suggested a pneumonitis, which was verified by roentgen examination. Blood culture yielded a pure growth of *Staphylococcus albus*. This organism was again isolated in pure culture, October 11 and 13. A metastatic infection of the left knee joint developed and the aspirated exudate yielded a growth of the same organism. October 14, transfusion of 500 cc of citrated blood was given, the brother of the patient being the donor. The girl responded well, so that other transfusions were not considered necessary.

During the course of the septicemia, a persistent slight resistance to flexion of the neck was encountered. A lumbar puncture, November 5, gave a cerebrospinal fluid with slightly increased globulin and 44 cells of the mononuclear variety. This added a confusing element to the picture. A second specimen of cerebrospinal fluid, November 10, gave the same increase in globulin and a count of 101 mononuclear cells. Blood Wassermann tests, November 8 and December 14, were negative.

Clinically there was marked improvement, blood cultures became negative and on December 28, the patient being tired of confinement in the hospital, signed a release and went home.

The patient was readmitted to the hospital, Feb. 29, 1932. She had not felt well for five weeks. Her illness was initiated with a sore throat, headache and malaise. After a week of indisposition, a rash of increasing severity appeared on the neck and forehead and spread to other areas of the body, affecting the trunk, extremities, hands and feet. The skin lesions ranged from macules to crusted pustules, the latter predominating. On the palms of the hands, copper colored macules were present, and about the labia the lesions assumed the appearance of early condylomas. A moderate generalized lymph node enlargement could be demonstrated, and the eyes and pharynx were injected. A blood Wassermann test was immediately taken and reported 3 plus with both the alcoholic and the cholesterinized antigens. A dark field examination of the exuded serum of two of the skin lesions revealed the presence of *Spirochaeta pallida*. The spinal fluid yielded a 1 plus Wassermann reaction, a slightly increased globulin test and a count of 122 mononuclear cells. The colloidal gold curve was 1123321000. The vaginal introitus was intact, no primary lesion could be found on the genitalia, and adenitis in the inguinal region was not more marked than in other parts of the body. With antisyphilitic treatment, the skin lesions involuted promptly.

#### THE DONOR

The brother who had been the blood donor reported at the Syracuse Free Dispensary, Nov. 9, 1931, with a penile lesion of three weeks' duration. Dark field examination of the lesion was negative, but serum aspirated from the inguinal glands was positive for *Spirochaeta pallida* and on November 13 the Wassermann reaction was 4 plus.

On being questioned after his sister became infected, as to whether the chancre was present at the time of transfusion he stoutly maintained that it did not appear until four or five days after he gave the blood.

#### COMMENT

This report adds another case to the meager list of instances of accidental transmission of syphilis by blood transfusion. Through a chain of fortuitous circumstances, the laboratory confirmation seems complete.

<sup>1</sup> Livingston, John. Suboccipital Meningocele Successfully Removed. *Brit. M. J.* 1: 508 (March 24) 1923.

<sup>2</sup> Bernheim, B. M. Blood Transfusion, Hemorrhage and the Immune. Philadelphia: J. B. Lippincott Company, 1917, p. 62.

<sup>3</sup> Spillmann and Morel. *Bull. Soc. franç. de dermat.* 32: 453 (1926).

<sup>4</sup> Polayes, S. H., and Lederer, Max. *Am. J. Syph.* 15: 72-80 (Jan.) 1931.

<sup>5</sup> Gougerot, Fiessinger and others. *Ann. d. mal. ven.* 26: 174-178 (March) 1931, *abstr. Bull. Soc. franç. de dermat.* 37: 1276-1278 (Dec.) 1931.

<sup>6</sup> McNamara, W. L. *Am. J. Syph.* 9: 470 (July) 1925.

A girl was given a blood transfusion and shortly afterward had two negative Wassermann tests. Approximately three months later a rash developed, clinically that of secondary syphilis, in which *Spirochaeta pallida* could be demonstrated, and the Wassermann reaction became 3 plus. These changes were produced in this patient in the absence of a primary lesion or evidences of defloration. In addition, the donor presented an indisputable case of syphilitic infection with a penile lesion, a positive Wassermann test and a positive dark field examination.

Of great interest is the apparently early involvement of the central nervous system by the spirochetes, as evidenced by a constantly positive globulin test and a pleocytosis which increased in successive examinations, culminating in a count of 122 mononuclear cells and a partially positive Wassermann reaction. The first increase of cells in the cerebrospinal fluid was noted twenty-two days after the transfusion and approximately two and one-half months before the onset of the secondary stage of the disease.

212 Physicians Building

## Committee on Foods

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

#### REAL BIG BOY BREAD (SLICED)

**Manufacturer**—The Uffelman Baking Company, Cincinnati

**Description**—A white bread made by the sponge dough method (method described in *THE JOURNAL*, March 5, 1932, p 817), prepared from patent flour, water, sweetened skimmed condensed milk, sucrose, salt, lard, yeast, a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, a partially hydrolyzed starch containing water, starch intermediate products, dextrose and protein, and malt syrup.

**Analysis** (submitted by manufacturer) —

	per cent
Moisture (entire loaf)	36.0
Ash	0.9
Fat	2.6
Protein (N × 6.25)	9.7
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	50.5

**Calories**—2.6 per gram 74 per ounce

**Claims of Manufacturer**—Conforms to U. S. Department of Agriculture definition and standard for white bread.

#### QUAKER HOMINY GRITS

**Manufacturer**—The Quaker Oats Company, Chicago

**Description**—Coarse white Indian corn grits containing practically no bran or germ.

**Manufacturer**—See this section for Quaker White Cornmeal (*THE JOURNAL*, Jan 7, 1933, p 43). The coarse material of desired granulation is packed in cartons under the brand name Quaker Hominy Grits.

**Analysis** (submitted by manufacturer) —

	per cent
Moisture	12.4
Ash	0.3
Fat (ether extraction method)	0.4
Protein (N × 6.25)	9.4
Crude fiber	0.7
Carbohydrates other than crude fiber (by difference)	76.8

**Calories**—1.5 per gram 99 per ounce

**Claims of Manufacturer**—A coarse granular white corn grits for all table uses.

#### JUANITA SHORT PATENT FLOUR (Bleached and Matured with Beta Chloral) (Phosphated or not Phosphated)

**Manufacturer**—The Scott County Milling Company, Sikeston, Mo.

**Description**—A "short patent" soft winter wheat flour, bleached and matured, phosphated or not phosphated.

**Manufacture**—Selected red winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in *THE JOURNAL*, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with a mixture of benzoyl peroxide and calcium phosphate ( $\frac{1}{10}$  ounce per 196 pounds) and matured with a mixture of chlorine and nitrosyl chloride ( $1\frac{1}{3}$  ounces per 196 pounds).

**Analysis** (submitted by manufacturer) —

(analysis of the unphosphated flour)

	per cent
Moisture	13.3
Ash	0.32
Fat (ether extraction method)	0.9
Protein (N × 5.7)	8.0
Crude fiber	0.2
Reducing sugars as dextrose	0.1
Sucrose (copper reduction method)	0.5
Total carbohydrates other than crude fiber (by difference)	77.3
Ash (phosphated flour)	0.52

**Calories**—3.5 per gram 99 per ounce

**Claims of Manufacturer**—This "short patent" flour is intended especially for cake and pastry baking.

#### JACK SPRAT BRAND GOLDEN SYRUP (Corn Syrup and Refiners' Syrup)

#### KING KORN BRAND GOLDEN SYRUP (Corn Syrup and Refiners' Syrup)

**Packer**—Penick and Ford Sales Company, Cedar Rapids, Iowa

**Distributors**—Jack Sprat Foods, Inc., Marshalltown, Iowa, and A-S Wholesale Company, Plainview, Neb.

**Description**—Table syrups, corn syrup base (85 per cent) with refiners' syrup (15 per cent), the same as Penick Golden Syrup (Corn Syrup and Sugar Refiners' Syrup), described in *THE JOURNAL*, April 2, 1932, p 1159.

#### 1 RED CROSS BRAND STERILIZED UNSWEETENED EVAPORATED MILK

#### 2 GOLD CROSS UNSWEETENED STERILIZED EVAPORATED MILK

#### 3 NORTHFIELD BRAND STERILIZED UNSWEETENED EVAPORATED MILK

#### 4 COLUMBINE STERILIZED UNSWEETENED EVAPORATED MILK

**Manufacturers**—1 Colorado Condensed Milk Company, Fort Lupton, Colo.

2 Mohawk Milk Products Company, New York City

3 Northfield Milk Products Company, Northfield, Minn.

4 Colorado Condensed Milk Company, Fort Lupton, Colo. The companies are subsidiaries of the Carnation Company, Milwaukee.

**Description**—Unsweptened sterilized evaporated milk.

**Manufacture**—The milk is collected and concentrated according to standard procedures (*THE JOURNAL*, April 16, 1932, p 1376).

**Analysis** (submitted by manufacturer) —

	per cent
Moisture	73.9
Total solids	26.1
Ash	1.5
Fat	7.9
Protein (N × 6.38)	6.8
Lactose (by difference)	9.9

**Calories**—1.4 per gram 40 per ounce.

**Ingredients and Claims of Manufacturer**—See announcement of acceptance of Evaporated Milk Association Educational Advertising (*THE JOURNAL*, Dec. 19, 1931 p 1890).

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 28, 1933

## THE HEMOLYTIC STREPTOCOCCI IN RHEUMATISM

Final conclusions concerning the rôle of streptococci in the rheumatic diseases have not yet been formulated by the majority of those interested in this question. Some recent observations, however, seem to offer new facts on this relationship. Dawson, Olmstead and Boots<sup>1</sup> have shown that serums of the majority of patients with "rheumatoid arthritis" possess the property of agglutinating strains of *Streptococcus hemolyticus* to a high titer. Curiously enough, no correlation was observed between the source of the strains and their agglutinability in the serums examined, strains from scarlet fever and erysipelas patients were agglutinated to as high a titer as were the "typical strains" of Cecil, Nicholls and Stainsby. Other gram-positive cocci were agglutinated not at all or only to a low titer with the exception of the *R. pneumococcus*. Serums taken from persons suffering from other conditions (except those recovering from known streptococcal infections) and serums from normal controls failed to agglutinate the strains of *Streptococcus hemolyticus* studied. These observations were of such apparent interest that the authors attempted to analyze the results further. It was thus brought out that the property of rheumatoid arthritis serum responsible for the agglutination of hemolytic streptococci is definitely related to the duration of the disease and the age of the patient. All the serums that gave the stronger agglutination reactions had been obtained from patients who had had the disease at least a year. Without attempting to draw definite conclusions from these observations, the authors point out that already there has accumulated a considerable amount of circumstantial evidence indicating *Streptococcus hemolyticus* in rheumatoid arthritis. Whether this connection is fortuitous or whether *Streptococcus hemolyticus* plays a primary or a secondary part in the causation of rheumatoid arthritis is a matter of importance.

With the differential diagnosis between "rheumatoid arthritis" and "rheumatic fever" not yet wholly clear, it is not surprising that the latter condition should be likewise studied in relation to the hemolytic streptococci. Coburn and Pauli,<sup>2</sup> who have done this, call the condition studied "the rheumatic state," yet there is little room for confusion. Following many of their patients over periods of years and in different climates, the authors noted a remarkable correlation between the appearance of *Streptococcus hemolyticus* in the throats—usually associated with "sore throat"—and exacerbation of the rheumatic symptoms. It was observed also that when *Streptococcus hemolyticus* disappeared from the throats of patients the "rheumatic" symptoms tended to become quiescent.

On studying the strains of *Streptococcus hemolyticus* obtained from the throats of rheumatic patients, Coburn and Pauli found that they fall into a number of serologic types. This failure to detect any single type of organism associated only with rheumatic fever led the authors to the conception that the specificity of the rheumatic response depends perhaps on some individual mechanism of the subject rather than wholly on the specificity of the parasite. Also it was noteworthy that the majority of the freshly isolated strains were strong toxin producers.

The immune reactions of patients' serums likewise were studied. The agglutination and complement fixation reactions of serums from patients with acute rheumatism suggest recent infection with the streptococcus. Precipitins to the protein fraction of hemolytic streptococci were developed by individuals synchronous with the appearance of the rheumatic attack. That the precipitins may not be entirely specific is recognized from their cross-reactions with antigens of chemically related organisms. A rise in the antistreptolysins occurring at the onset of an attack of acute rheumatism was demonstrated by E. W. Todd.<sup>3</sup> The titer reached was much higher than that observed in normal subjects or in patients with bacterial infection from other than hemolytic streptococci.

The studies mentioned would appear to offer almost incontrovertible etiologic evidence but for certain additional factors that must be considered. If there is a common etiologic agent for "rheumatic fever" and "rheumatoid arthritis," a return is made to the conception of Sydenham, who describes the two conditions as different manifestations of the same disease. This step relatively few students of the subject are yet ready to take, while granting in many instances considerable difficulty in differentiation. Evidence implicating streptococci other than hemolytic has emanated from many sources, e. g., Rosenow, Burbank and Clawson, and such results must also be disproved or explained. The distribution of hemolytic streptococci in health and

<sup>1</sup> Dawson, M. H., Olmstead, Miriam, and Boots, R. H. Agglutination Reactions in Rheumatoid Arthritis, *J. Immunol.* 23: 187 (Sept) 1932.

<sup>2</sup> Coburn, A. F. and Pauli, R. H. Studies on the Relationship of *Streptococcus Hemolyticus* to the Rheumatic Process, *J. Exper. Med.* 56: 609 (Nov.) 1932.

<sup>3</sup> Todd, E. W., cited by Coburn and Pauli.

disease is, moreover, so widespread as to make proof of their specific pathogenic nature especially difficult. The present studies are a welcome addition to the precise study of the rheumatic diseases

### A HEALTH RECORD FOR 1932

Years ago, Lee<sup>1</sup> concluded a series of lectures on modern medicine with the cogent reminder that the ideals of the profession are so high that it can be trusted to do what is in its power to put an end to the ills of suffering humanity. Yet it should be borne in mind, he added, that scientific medicine unaided has a well-nigh impossible work before it. If it is to accomplish the final banishment of disease, it must have the sympathetic cooperation and encouragement of mankind, in whose interests it continually labors.

One way to secure a sympathetic attitude is to point to actual accomplishment in the field of public health. This often serves with almost equal success to inspire the physician himself and to give him renewed confidence in the effectiveness of his endeavors. The fact that there is no "iron law of mortality" is beginning to be appreciated. Only a quarter of a century ago the average death rate in the United States approximated 18 per thousand of the population, a figure not widely different from that of many European countries. The urban mortality was invariably larger than that of rural areas. The year 1932, however, set a record for low mortality in our largest metropolis, New York, with its variegated population of nearly seven and one-fourth million persons. According to the annual report of the commissioner of health, 1927 had previously been the most healthful year. In 1927 the general death rate from all causes was 10.71 per thousand of population and the infant death rate 56 per thousand births. In 1931 the respective rates were 10.92 and 55.6. During the year just closed the general death rate was only 10.3 per thousand of population and the infant mortality rate was 50.9 per thousand births.

The chief causes of death are of perennial interest. In the order of their numerical importance they were chronic heart disease (with its toll of about 19,000 persons), cancer, pneumonia, accidents, pulmonary tuberculosis, Bright's disease and diabetes, with a residual heterogeneous mortality of 26,000 from "other causes" out of a total of 74,000. The deaths from pneumonia and tuberculosis were measurably fewer than in the preceding year. A distinct improvement in the death rate from diseases of the heart, arteries and kidneys is reported among persons under 65 years of age. It can no longer be alleged with truth that the saving of life is confined to the period of infancy.

It has been said that much illness is preventable and that public health is purchasable. Many persons are more readily impressed by the showing in dollars and

cents than by humanitarian sentiments with respect to the value of our modern public health activities. Preventive medicine is often charged with being overloaded with costly "frills." Accordingly the economic aspects of the health situation in New York may be of more than passing interest. At the present time the annual expenditure of the department of health for all its manifold activities is less than 70 cents per capita, a sum lower than that expended by other large cities of the world. The New York report asserts that, in this metropolitan city during the five years 1921-1925, the general death rate averaged 11.42 per thousand of population. Had this rate prevailed during 1932, 8,000 more deaths would have occurred. At the valuation of \$10,000 for each life, the economic saving as a result of the low death rate attained has been about \$80,000,000. Compared with the annual budget of the department of health, about \$5,000,000, this is a handsome return.

The period of economic stress through which we are passing is calling for retrenchment in expenditures in almost every direction. The increase in poverty and unemployment is in the long run provocative of ill health as well as of suffering. The need for medical care as well as for public hygiene will almost certainly be somewhat augmented. Our communities must see to it that the high standards of public health already so fortunately achieved shall not be allowed to decline because of undue economies enforced on the essential health promoting agencies now supported by public funds.

### RECENT INVESTIGATIONS OF ADRENAL FUNCTION

The intensive experimental study of suprarenal functions recently reported from several laboratories affords an added illustration of the great help that clinical medicine may derive from animal experimentation. The demonstration that loss of the cortex—in contrast to the extirpation of the adrenal medulla—results in symptoms quite characteristic of the manifestations of Addison's disease in man is paving the way to what may in due time become an adequate replacement therapy.<sup>1</sup> One of the symptoms of adrenalectomy is a defect in carbohydrate metabolism. The alleviatory effects of administration of cortical extracts, such as have become available in the past few years, appear to be related to the restoration of a normal carbohydrate balance. In this connection Silvette<sup>2</sup> suggests that cortical adrenal extracts increase the rate of glycolysis in the presence of normal defibrinated blood *in vitro* from 25 to 125 per cent above that found in the control tests.

The familiar asthenia of Addison's disease is represented in the muscular incapacity of adrenalectomized

<sup>1</sup> Lee, F. S. S. *A Feature of Modern Medicine*. New York: C. R. University, 1921.

<sup>1</sup> A review of some of the earlier work is given by Britton, S. W. *Physiol. Rev.* **10**: 617 (Oct.) 1930.  
<sup>2</sup> Silvette, Herbert. Effects of Cortico-Adrenal Extract on Glycolysis *in Vitro*. *Am. J. Physiol.* **102**: 693 (Dec.) 1932.



animals It is relieved by administration of epinephrine-free cortical extracts, even in cases of severe prostration<sup>3</sup> Britton<sup>4</sup> and his co-workers at the University of Virginia Medical School have lately studied the influence of cortico-adrenal extract on the energy output of dogs running in a treadmill Animals were observed for periods of four, five and seven months After the standard running capacity had been established, the effects of adrenal extract were tested Intraperitoneal injection of the extract was found to augment the energy output up to 100 per cent or more above the normal The average increase in six series of experiments was 90 per cent The running time and the distance run were also increased about 90 per cent In one instance an animal which regularly ran a distance of about 4 miles before treatment covered more than 9 miles under the influence of cortico-adrenal extract The effects were noticeable from ten to fifteen days after injection Blood sugar almost invariably fell during prolonged running and its course was not notably altered by cortico-adrenal extract

As early as 1855, Addison referred to circulatory manifestations that he regarded of considerable importance in the disease now bearing his name The sallow complexion was referred by many observers to an assumed concomitant anemia It might well have been due to poor peripheral circulation The latest investigations<sup>5</sup> at the University of Virginia substantiate the assumption that adrenal insufficiency does produce changes in the blood Anemia however, is not one of them In the cellular changes arising with development of the deficiency symptoms, the erythrocytes increase commonly from 50 to 100 per cent, this change is probably due to fluid loss from the blood The total leukocyte counts are meanwhile found to be decreased to a similar extent There are pronounced reductions in the neutrophil counts, sometimes almost to the disappearing point The lymphocytes show a concomitant increase in percentage The administration of cortico-adrenal extract to animals suffering from severe adrenal insufficiency, and showing the blood-cellular disorganization described, resulted in complete restitution of the normal cell values Recovery of the blood cell elements to normal values was coincident with general improvement

The Virginia investigators refer to the possibility that the neutrophilopenia of adrenal insufficiency is related to the clinical condition of "agranulocytosis" as observed in man They point out that the neutrophil leukocyte is one of the chief cellular defense mechanisms<sup>6</sup> To

Britton and his co-workers it seems reasonable to suppose that such a highly differentiated (and probably relatively unstable) tissue as the adrenal cortex may be disorganized oftener and more readily than suspected, and such disorganization may indeed be implicated in neutropenic conditions observed in man The pathologic effects of removal of the adrenals are serious and it would appear likely that many diseases of now unknown etiology may be explicable on the basis of cortico-adrenal hypofunction or dysfunction Perhaps, as Corey and Britton<sup>6</sup> suggest, in view of the increasing availability and knowledge of extracts of the adrenal cortex more extensive tests of the therapeutic value of the material will be now undertaken

## Current Comment

### BANCROFT'S THIOCYANATE THERAPY

Recently THE JOURNAL<sup>1</sup> referred to Bancroft's method for the control of narcotic addiction and of the effects of anesthetic drugs The therapeutic project sponsored by the physical chemist Bancroft of Cornell University and some of his co-workers<sup>2</sup> seems to have been exploited to some extent through lay channels The principles involved depend on the assumption that anesthesia results when the colloids of the sensory nerve cells are reversibly coagulated (the coagulating agent is the anesthetic) If the anesthetic is displaced by a substance that causes weaker flocculation, the biocolloids, it is said, are peptized by the electrolytes within the cells and there is a return of irritability and consciousness Bancroft and his associates ventured to test their hypothesis on animals Choosing sodium thiocyanate—also designated rhodanate by some chemists—as the peptizing agent, the Cornell University chemists believed that the sensory nerve colloids are albumin-like and should absorb the thiocyanate ion strongly and be easily peptized by the cell electrolytes The experiments have recently been criticized as unconvincing by Burkholder<sup>3</sup> of the department of pathology at the University of Chicago His results obtained with sodium thiocyanate as an antagonist for ether did not corroborate the conclusions brought forth by Bancroft and Rutzler that thiocyanate ions antagonize the anesthetic action of ether In a large majority of the experiments with ether the return to normal of the lid reflexes and other manifestations required a longer time in these experimental animals than in their controls In the quantities used, seven of seventeen rabbits that received the ether and thiocyanate died In experiments with sodium thiocyanate as an antagonist for sodium amytal it was found that the sodium thiocyanate did not shorten the long anesthesia but instead lengthened it,

<sup>3</sup> Britton, S. W., and Silvette, Herbert. *Am J Physiol* **99** 15 (Dec) 1931, **97** 507 (March) 1931. **100** 693, 701 1932. Swingle, W. W., and Pfiffner, W. W. *Am J Physiol* **96** 153 (Jan) 1931.

<sup>4</sup> Eagle, E., Britton, S. W., and Kline, R. The Influence of Cortico-Adrenal Extract on Energy Output, *Am J Physiol* **102** 707 (Dec) 1932.

<sup>5</sup> Corey, E. L., and Britton, S. W. Blood Cellular Changes in Adrenal Insufficiency and the Effects of Cortico-Adrenal Extract, *Am J Physiol* **102** 699 (Dec) 1932.

<sup>6</sup> Doan, C. A. The Neutropenic State. *J. A. M. A.* **99** 194 (Jul) 16) 1932.

<sup>1</sup> Sodium Thiocyanate (Rhodanate) and the Theory of Agglomeration. Current Comment. *J. A. M. A.* **99** 2270 (Dec. 31) 1932.

<sup>2</sup> Bancroft, W. D., and Rutzler, J. E., Jr. The Colloid Chemistry of the Nervous Systems. *J. Phys. Chem.* **35** 1185 (May) 1931. Bancroft, W. D., and Richter, G. H., *ibid.* **35** 215 (Jan) 1931. Bancroft, W. D., and Rutzler, J. E., Jr., *ibid.* 3189 (Nov) 3452 (Dec) 1931.

<sup>3</sup> Burkholder, T. M. The Effect of Sodium Thiocyanate on the Action of Anesthetic and Narcotic Drugs, *J. Lab. & Clin. Med.* **18** 29 (Oct) 1932.

and decreased instead of increased the respiratory rate. Three of seven rabbits died. In experiments with sodium thiocyanate as an antagonist for morphine, it was found that the morphine narcosis was not counteracted in any way and that gradient reduction in the dosage of thiocyanate still proved fatal or toxic. Such a recital of actual attempts to corroborate Bancroft's results warns against undue exploitation of a drug of which the pharmacologic effects are by no means conclusively established.

## Association News

### ANNUAL CONGRESS ON MEDICAL EDUCATION AND MEDICAL LICENSURE

Program of Meetings to Be Held in Chicago, February 13 and 14

The next Congress on Medical Education and Medical Licensure will be held in the Palmer House, Chicago, February 13 and 14, with the following program

#### MONDAY MORNING, 10 00

RAY LYMAN WILBUR M D Presiding  
Washington D C

*Report of the Chairman of the Council on Medical Education and Hospitals of the American Medical Association*  
Ray Lyman Wilbur M D Washington D C

*Results of the Work of the Commission on Medical Education*  
Samuel P Capen Ph D Chancellor University of Buffalo

*Discussion* E Stanley Ryerson M D Toronto  
*Medical Education Abroad*  
Alan Clegg M D Director The Medical Sciences The Rockefeller Foundation New York

*Discussion* E P Lyon M D Minneapolis  
*Comments on the Internship*  
Willard C Rappleye M D Dean Columbia University College of Physicians and Surgeons New York

*Discussion* Vernon C David M D Chicago. Red Lacquer Room

#### MONDAY AFTERNOON, 2 00

##### RECOGNITION OF SPECIALISTS

JOINT SESSION OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS AND THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

MERRITTE W IRELAND M D Presiding  
Member Council on Medical Education and Hospitals  
Washington D C

*The Function of Special Boards of Examiners*  
Stanford R Clifford M D, Chicago

*The Function of the States*  
Walter L Biering M D Secretary Treasurer The Federation of State Medical Boards of the United States Des Moines Iowa

*The Function of Medical Schools*  
Irving S Cutter M D Dean Northwestern University Medical School Chicago.

*The Relation of the Council on Medical Education and Hospitals to the Special Practice of Medicine*

Ray Lyman Wilbur M D Chairman Washington D C  
*Discussion* Louis B Wilson M D Rochester Minn Dean Lewis M D Baltimore, J Stewart Rodman, M D Philadelphia William A Pearson M D Philadelphia Red Lacquer Room

#### MONDAY EVENING 6 30

Dinner The Federation of State Medical Boards of the United States  
The address of the President T J Crowe M D Dallas Texas will be presented and an informal round table discussion will follow

#### TUESDAY MORNING 9 30

##### NURSING

JOINT SESSION OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS AND THE AMERICAN CONFERENCE ON HOSPITAL SERVICE

HARRY E MOCK M D Presiding  
President American Conference on Hospital Service  
Chicago

*Nursing Education and Nursing Service*  
Frederic J Taylor R N Director of Nursing in Psychiatry Yale School of Nursing New Haven Conn

*Cost of Nursing Service and Nursing Education*  
Julius Koren Ph D Associate Medical Services Julius Rosenwald Fund Chicago.

*The Function of the Nurse as Prescribed by the Physician*  
George H Corman M D Chicago

*Discussion* J J Lippincott M D Director of Hospital Administration  
C W Mace M D Director of Hospital Administration

*Discussion* Ernest E Irons M D Chicago Katharine J Densford R N, Minneapolis Frederic A Washburn M D, Boston Adda Eldredge, R N, Madison Wis, George S Stephens, M D, Winnipeg Manit. Grand Ball Room

#### TUESDAY MORNING, 9 30

##### MEDICAL ECONOMICS

RAY LYMAN WILBUR M D Presiding  
Chairman Council on Medical Education and Hospitals  
Washington D C

*Separation of Research from Teaching*  
W T Coughlin M D, Professor of Surgery St Louis University School of Medicine

*Discussion* D J Davis M D, Chicago  
*Comment on Investigations and Conclusions of The Committee on the Costs of Medical Care*

Lewellys F Barker M D Member, The Committee on the Costs of Medical Care Baltimore

*Basic Consideration in the Minority Report of The Committee on the Costs of Medical Care*  
Alphonse M Schwittalla S J, Ph D Dean, St Louis University School of Medicine and Member, The Committee on the Costs of Medical Care.

*Prepayment Plans for Hospital Care*  
R G Leland M D Director Bureau of Medical Economics of the American Medical Association, Chicago

*Discussion* Michael M Davis Ph D Chicago Nathaniel W Faxon M D, Rochester N Y Red Lacquer Room

#### TUESDAY MORNING, 9 30

##### THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

T J CROWE M D Presiding  
President The Federation of State Medical Boards of the United States  
Dallas Texas

*Philosophy of Medical Licensure*  
H M Platter M D Secretary Ohio State Medical Board Columbus  
*Discussion* Henry M Fitzhugh M D Baltimore J H McLean M D, Fort Worth Texas J Gurney Taylor M D Milwaukee.

*Dental Licensure Problems*  
J V Conzett D D S Chairman National Board of Dental Examiners  
Dubuque, Iowa

*Discussion* W H G Logan D D S Chicago  
*The Licensing of European Medical Graduates*  
William D Cutter M D, Secretary Council on Medical Education and Hospitals Chicago

*The Foreign Medical Graduate in New York State*  
Harold Rypins M D, Secretary New York Board of Medical Examiners Albany

*Discussion* Willard C Rappleye, M D New York Irving S Cutter M D Chicago Claude A. Burrett, M D New York. Room 13

#### TUESDAY NOON

Luncheon Meeting Grand Ball Room Central Council for Nursing Education Winford H Smith, M D Director Johns Hopkins Hospital, Baltimore will speak on 'Future Trends in Nursing'

#### TUESDAY AFTERNOON, 2 00

CHARLES E HUMISTON M D Presiding  
Member, Council on Medical Education and Hospitals  
Chicago

*Training of Laboratory Technicians*  
Walter M Simpson M D President, American Society of Clinical Pathologists Dayton Ohio

*Discussion* J J Moore M D Chicago  
*The Need of Professionalization in Public Health*  
John A. Ferrell, M D Associate Director International Health Division The Rockefeller Foundation New York

*Discussion* Waller S Leathers M D Nashville, Tenn  
*Who Should Teach Physical Therapy*  
F J Gaenslen M D, Professor of Orthopedic Surgery University of Wisconsin Medical School Madison

*The Council on Physical Therapy of the American Medical Association—Its Problems and Its Progress*  
Harry E Mock M D Chairman Chicago

*Discussion* Joseph F Smith M D Wausau Wis Edwin W Ryerson M D Chicago Red Lacquer Room

#### TUESDAY AFTERNOON, 2 00

##### THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

T J CROWE M D Presiding  
President The Federation of State Medical Boards of the United States  
Dallas Texas

*Regulation of the Practice of Pharmacy*  
H C Christensen Secretary National Association of Boards of Pharmacy Chicago

*Licensure Problems in the Southern States*  
N D Buie M D President Texas State Board of Medical Examiners  
Marlin

*Discussion* Roy B Harrison M D New Orleans  
*Interstate Endorsement of Medical Licensure*  
J N Baker M D State Health Officer Montgomery Ala

*Discussion* Charles B Kelley M D Jersey City N J  
*Federation Business Session*

#### Reduced Railway Fares

The various passenger associations have granted the guests of the congress the privilege of reduced rates for round trip and excursion tickets

Room 13

## MEDICAL BROADCAST FOR THE WEEK

## American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 9 45 to 9 50 a m (central standard time) over Station WBBM (770 kilocycles, or 389.4 meters)

The subjects for the week are as follows

January 30 Pity the Poor Ostrich!  
February 1 Learning to Live

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM

The subject for the week is as follows

February 4 Exercise and Play for the Normal Child

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## Medical News

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(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

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### CALIFORNIA

**New Mental Hospitals**—Two new units of the Agnew State Hospital, erected at a cost of \$700,000 for chronic cases of mental disorder, have been placed in use. Each houses 400 patients.—Plans have recently been completed for a \$700,000 hospital for the insane at Camarillo, the first unit of a new state group, it is reported. It will consist of about twenty wards, each of which will accommodate about 100 patients.

**Bills Introduced**—A 114 proposes to repeal "the California Barber Law." A 209, to amend the dental practice act, proposes to define unprofessional conduct, which is a ground for the revocation of a license, to include "advertising in any manner any free dental work or free examination, guaranteeing any work done or making any inference that such a guarantee will be made, any advertising of prices." A 273, to amend the law permitting municipalities and counties, or groups thereof, to establish and maintain hospitals for the treatment of persons in the active stages of tuberculosis, proposes that such hospitals shall be under the direct control of a licensed and practicing physician. A 288, to amend the workmen's compensation act, proposes "that registered nurses employed by a hospital accommodating three or more patients shall be held to be the employees of the hospital within the meaning of this act." A 211 proposes to create a state board of eugenics authorized to order, on the recommendation of a superintendent, managing director, or warden, the asexualization of inmates of any state home, hospital, colony for the mentally diseased, or penitentiary, when the release of such inmates without sterilization would be likely to lead to the procreation of offspring with "a tendency to serious physical, mental or nervous disease or deficiency." A 349 proposes to vest in the state board of pharmacy all functions now exercised by the chief of the division of narcotic enforcement. A 245, to amend the narcotic rehabilitation act, proposes (1) to forbid the commitment of a drug addict to the state narcotic hospital who has theretofore been committed to that hospital, unless there is filed with the court a statement from the medical superintendent of the hospital that the addict is a suitable case for treatment, and (2) to permit the superintendent of the state narcotic hospital to return to the committing court patients who are menaces to the health or morals of other patients, who refuse to cooperate with the hospital authorities, or who have previously received treatment at the hospital and will not be benefited by further treatment.

### COLORADO

**Bill Introduced**—H 30, a bill for an act relating to the administration of the state government, proposes, among other things, (1) to create in the executive department a division of public health, the head of which, designated as the commissioner of public health, is to be a physician, on whom is to devolve all the rights and duties now vested in the state board of health, the meat and slaughter plant inspectors and the state chemist, and who is to have authority to supervise and remove from office all local health officers, and (2) to create in the state department of state a division of registrations to consist of the various examining and licensing boards which are to continue as now organized and existing.

**Midwinter Graduate Clinics**—The Colorado State Medical Society sponsored diagnostic and therapeutic clinics in Denver, January 18-20, which were specially planned for the general practitioner. According to a preliminary announcement, the program included the following:

Dr. Frank E. Rogers, Fractures of the Lower Extremities  
Dr. Harold R. McKeen, Fractures of the Upper Extremities and Shoulder Girdle  
Dr. John M. Foster, Jr., Fractures of the Skull  
Dr. Hamilton I. Barnard, Astragalectomy and Pott's Fracture.  
Drs. Kenneth D. Allen and Leonard G. Crosby, X-Ray Interpretations  
Dr. Harry H. Wear, Papillary Tumor of the Kidney  
Dr. William M. Spitzer, Transurethral Resection  
Dr. James A. Philpott, Urological Conditions in Children  
Dr. Clarence B. Ingraham, Jr., Cystocele, Rectocele and Prolapse of the Uterus  
Dr. Cuthbert Powell, Differential Diagnosis of Pelvic Tumors  
Dr. William H. Halley, Trichomonas  
Reuben G. Gustafson, Ph.D., Female Sex Hormones  
Dr. Cyrus W. Anderson, Anomalies of the Uterus  
Dr. Charles W. Dorsey, Jr., Application of Forceps  
Dr. Harry J. Corper, Pathogenesis of Tuberculosis  
Dr. Isadore D. Bronfin, Early Diagnosis and Treatment of Pulmonary Tuberculosis  
Dr. Saling Simon, Differential Diagnosis of Pulmonary Tuberculosis  
Dr. Casper F. Hegner, Possibilities of Surgical Procedures in the Treatment of Pulmonary Tuberculosis  
Dr. Robert Levi, Diagnosis of Tuberculosis of the Ear and Throat  
Dr. Harry Gauss, Diagnosis and Treatment of Intestinal Tuberculosis

Clinics were also conducted in pediatrics, orthopedics, general surgery and general medicine.

### CONNECTICUT

**Outbreak of Smallpox**—Within three weeks after the discovery of nineteen cases of smallpox in New Milford, Dec. 20, 1932, all known cases were released from quarantine and no recent cases have been reported, according to the state department of health, January 16. Although the source of the outbreak was not definitely traced, it was reported that a person from New York had smallpox while visiting in New Milford.

**State Health Meeting**—At the annual meeting of the Connecticut Public Health Association in New Britain, January 26, Dr. William F. Wild, Bridgeport, delivered the presidential address on "Added Health Problems Caused by Depression." Mayor George A. Quigley gave the address of welcome. Other speakers included:

Dr. Stanley H. Osborn, state health commissioner, Hartford, Proposed 1933 Health Legislation  
Dr. John L. Rice, health officer, New Haven, Proposed Changes in Sanitary Code  
Dr. Herbert R. Edwards, New Haven, Advance in Tuberculosis Control  
Dr. John A. Ferrell, New York, president, American Public Health Association, Public Health and the Community Dollar  
Miss Ruth Gilbert, mental hygiene supervisor, Visiting Nurse Association, Hartford, Mental Hygiene and Public Health Nursing  
Dr. Walter T. Harrison, U. S. Public Health Service, Washington, D. C., Why Toxoid Is Replacing Toxin Antitoxin  
Dr. Millard Knowlton, director, bureau of preventable diseases, state department of health, Hartford, High Lights on the Latest Communicable Diseases in New England  
Warren J. Scott, director, bureau of sanitary engineering, state health department, Causes of Odors and Taste in Water

Charles-Edward A. Winslow, Dr. P. H., professor of public health, Yale University School of Medicine, New Haven, addressed a joint luncheon meeting with the New Britain Rotary Club on "Today's Challenge in Public Health."

### DELAWARE

**Personal**—With the December, 1932, issue of the *Delaware State Medical Journal*, Dr. William Edwin Bird, Wilmington, completed his sixteenth year as editor.

**Economics Discussed**—Three physicians addressed the New Castle County Medical Society in Wilmington, January 17, on economic subjects. Dr. Rosco G. Leland, director, Bureau of Medical Economics, American Medical Association, Chicago, talked on "New Forms of Medical Practice"; Dr. Richard W. Larer, Philadelphia, "The Status of the Physician and Medicine Today," and Dr. Arthur C. Morgan, Philadelphia, "The Minority Report."

### ILLINOIS

**Bills Introduced**—H 72 and S 146 propose to repeal the present law relating to the regulation of maternity hospitals and to provide for the licensing and supervision of such hospitals by the state department of public health.

### Chicago

**Symposium on Abdominal Emergencies**—The Chicago Medical Society will devote its meeting, February 1, to a symposium on abdominal emergencies. The nontraumatic aspect will be discussed by Dr. Roger T. Vaughan, abdominal injuries, Dr. George G. Davis, emergencies in infancy and childhood,

Dr Edwin M. Miller, and the gynecologic phase, Dr Harold O. Jones. Discussants will be Drs William R. Cubbins, Harry E. Mock, Gatewood, Frederick H. Falls, Robert A. Black and Joseph Brennemann.

**Society News**—Dr Arthur Earl Walker, among others, addressed the Chicago Neurological Society, January 19, on "Attachments of the Dura Mater to the Cranium."—The Chicago Gynecological Society was addressed, January 20, by Drs Louis Rudolph on "Delivery of the Shoulders in Cephalic Presentation, Mechanism and a Modified Method of Delivery," and Joseph B. DeLee, "The Physiology and Conduct of Normal Labor."—Dr Ernst Pribram spoke on "Metabolism of the Intestinal Flora and Disease" before the McDonagh Society for Clinical Research, January 20.—Dr Clayton J. Lundv addressed the Chicago Society of Internal Medicine, January 23, among others, on "Ventricular Extrasystoles Elicited from the Exposed Human Heart."—At a meeting of the Chicago Urological Society, January 26, Dr William J. Carson, Milwaukee, spoke, among others, on "Supernumerary Kidney."

## INDIANA

**Bill Introduced**—H. 68 proposes to create a board of barber examiners and to regulate the practice of barbering.

**Society Provides Free Clinic**—The Shelby County Medical Society has made arrangements for a free medical clinic to care for people in the county unable to pay. Only ambulatory patients will be treated. Prescriptions will be filled by local druggists at cost, the expense to be carried by township funds, newspapers reported. At the time of the report no method of financing the cost of roentgenograms had been decided on, although the hospital will provide them at cost. The clinic was to have begun operation the first week in January.

## IOWA

**Society Favors Minority Report**—The Dubuque County Medical Society, Dubuque, at its annual meeting in December, adopted a resolution endorsing the minority report of the Committee on the Costs of Medical Care.

**Personal**—Drs Jacob M. Smittle, Waucoma, Charles W. Ellison, Waterloo, Thomas D. Kas, Sutherland, and J. Frank Aldrich, Shenandoah, are new members of the state board of health appointed to succeed Drs Herbert R. Sugg, Clinton, Herbert W. Plummer, Lime Springs, William A. Seidler, Jamaica, and James D. Lowry, Fort Dodge.

**Society News**—Dr Oliver J. Fay will discuss the final report of the Committee on the Costs of Medical Care before the Des Moines Academy of Medicine and the Polk County Medical Society, January 31, and Dr Olin West, Secretary and General Manager, American Medical Association, Chicago, what the report means to organized medicine.—The Linn County Medical Society will be addressed, February 9, by Drs William R. Cubbins, Chicago, on "Injuries to the Knee Joint," and Arthur Steindler, Iowa City, "Muscle Contractures." Dr Charles S. Day, Cedar Rapids, spoke on "Prophylactic Obstetrics."

## KANSAS

**Society News**—At a meeting of the Wyandotte County Medical Society, January 17, Drs Lewis W. Angle and Willis H. McKean spoke on "Surgical Treatment of Pulmonary Tuberculosis" and "Skull Fractures and Craniocerebral Trauma—Treatment of the Acute Phase," respectively.

**Bills Introduced**—H. 74 proposes to repeal the law relating to free dental inspections in public schools. H. 137 proposes to abolish the office of coroner in counties having a population of more than 110,000 and to vest the coroner's duties in the county physician.

## KENTUCKY

**Hospital News**—A new \$65,000 addition to the Berea College Hospital, Berea, was dedicated recently, with ceremonies at which Dr Joel E. Goldthwait, Boston, was the chief speaker. The new building, a three-story brick structure, will be known as the Munger Memorial and the Charles T. Ballard Jr. Clinic.

**Personal**—Dr Robert K. Galloway, Henderson, was elected president of the Green River Valley Public Health Association, December 1.—Dr Robert F. Porter, Leitchfield, resigned as health officer of Grayson County recently. Dr Charles F. Porter, Louisville, has been appointed to succeed Dr Porter.—Dr Frank C. B. Campbell, Philadelphia, has been appointed health officer of Pulaski County, succeeding Dr Robert M. Facer, who resigned in August 1932.

**Faculty Changes at Louisville**—Within recent months the following appointments to the faculty of the University of Louisville School of Medicine have been announced:

Dr George M. Lawson, head of the newly created department of public health and bacteriology.

Dr S. Spafford Ackerly, associate professor of psychiatry.

Dr Retting A. Griswold, associate professor of surgery.

Dr Clarence E. Bird, head of the department of surgery and director of surgical service, Louisville City Hospital.

Dr George E. Wakerlin, acting head of the department of pharmacology and physiology in the absence of Dr William F. Hamilton.

Hampton Lawson, Ph.D., assistant professor of physiology and pharmacology.

## MAINE

**Personal**—Dr Paul Wakefield has been appointed superintendent of the Central Maine Sanatorium, Fairfield. Dr Wakefield, until recently chief of the State Clinics for Childhood Tuberculosis in Massachusetts, known as the Chadwick Clinics, worked in China from 1905 to 1928.

## MASSACHUSETTS

**Awards for Research in Psychiatry**—The New England Society of Psychiatry, at its next spring meeting, will make two awards, \$100 and \$50, to the writer or writers of the best papers completed or published during the calendar year of 1932 embodying research in psychiatry. Physicians, psychologists, social workers and others are eligible. Membership in the society is not a requisite. Writers who have once received an award are not again eligible. The work on which the papers are based should preferably have been done in New England or by workers now living in New England. Copies of articles or marked copies of journals in which the articles appeared should be sent before February 1 to the secretary of the society, Dr Harlan L. Paine, North Grafton, Mass.

**Bills Introduced**—H. 151 proposes to repeal the present Massachusetts laws with respect to narcotics and to enact a uniform narcotic drug act. H. 313 proposes to create a department of public medicine and health, to be vested with all the duties and functions of the departments of public health, of mental diseases, of public welfare, of industrial accidents, and of all local boards of health and school physicians in the commonwealth. The department is to be authorized to render free medical and surgical services of all kinds in all cases of sickness, accidents and childbirth, to all citizens of the commonwealth, including transportation to and from hospitals, and all drugs and artificial appliances when required for the restoration of an ailing citizen. H. 544, to amend that portion of the medical practice act defining the rights conferred on physicians registered with the board of registration in medicine as interns, proposes that such a licensee be permitted to practice medicine, not "only in the hospital or institution designated on his certificate," but also "outside of such hospital or institution for the benefit of patients accepted as such by such hospital or institution and under the supervision of a duly registered physician serving as a medical officer of such hospital or institution and under regulations established by such hospital or institution." H. 519 proposes to accord to physicians, nurses or hospitals rendering professional services to persons injured through the fault of another, liens on any judgments, compromises, or settlements obtained by the injured persons by reason of their injuries. The proposed lien is not to attach to recoveries under the workmen's compensation act. H. 115, to amend the optometry practice act, proposes, in effect, (1) to permit optometrists to treat all manner of defects of the human eye with all therapeutic agencies except drugs, (2) to raise the educational requirements for future applicants for licenses and (3) to permit optometrists to use the title "Dr." H. 782, to amend the medical practice act, proposes that such persons as were actively engaged in the practice of osteopathy prior to Jan. 1, 1909 and who are now registered as osteopaths with the board of registration in medicine "shall be entitled to all the rights and privileges of a registered physician." Persons prescribing or administering drugs for internal use, from performing major operations and from practicing obstetrics H. 783 proposes "that no person shall be required to submit to any form of vaccination or inoculation unless the physician as a condition precedent, supplies said person with a written statement guaranteeing the purity of the virus to be used. Any physician vaccinating without proper consent is to be personally liable for all injuries that result." H. 660 proposes to authorize the department of public health to furnish insulin to such physicians and other persons as make application therefor, at a price not to exceed 5 per cent of its cost. H. 661 proposes to provide for the examination and licensing of local public health officers and agents by the state department of

public health H 679, to amend the workmen's compensation act, proposes to bring within the provisions of the act employees of any hospital maintained by any county or district, if the trustees of that hospital accept the provisions of the act. S 124 proposes a procedure to secure the payment of the charges of any hospital, incorporated as a charitable corporation or under public control, for services arising out of motor vehicle accidents, out of the proceeds of motor vehicle liability policies and bonds. S 162 proposes to require the vaccination of children in private schools. S 212 proposes that no person be required to submit to any form of vaccination or inoculation as a condition precedent to admission to any public institution or to the exercise of any right, performance of any duty or enjoyment of any privilege. S 214 proposes to establish a board of registration of hair dressers, cosmetologists and electrologists and to regulate those occupations. The bill proposes to permit a licensed "electrologist" to remove superfluous hair, warts, moles and other skin blemishes from the body of any person by the use of electricity.

#### MICHIGAN

**Society News**—Dr Frederick A. Collier, Ann Arbor, addressed the Kalamazoo Academy of Medicine, January 17, on "The Acute Appendix and Its Complications."—Dr Palmer E. Sutton, Royal Oak, addressed the Oakland County Medical Society, January 19, on the birth control movement.—Dr Duncan A. Campbell addressed the Detroit Ophthalmological Club, Dec 7, 1932, on "Ultimate Visual Acuity Following Removal of Intra-Ocular Foreign Bodies."

**Academy to Care for the Indigent**—One thousand dollars a month will be paid by the city of Battle Creek to the newly incorporated Battle Creek Academy of Medicine and Dentistry, under a recently adopted plan for the latter to provide medical care for the indigent sick. The plan became effective January 1, newspapers reported. For this stipulated fee, the academy will provide all medical care required by the poor and unemployed of the city during 1933. The only exceptions are contagious diseases, which have always been treated by the health department, and the cost of exceptional drugs and appliances. The academy will also provide its own investigating nurse, whose salary will be paid out of the monthly \$1,000. It was estimated that under the plan each physician would receive about one third of his usual fee. No arrangement for hospitalization had been made at this report.

#### MISSOURI

**Personal**—Dr Patrick H. Owens, Kansas City, has been elected coroner of Jackson County.—Dr James Harvey Jennett has been appointed superintendent of General Hospital, Kansas City, to succeed the late Dr Porter E. Williams.—Dr Eugene A. Scharff resigned as superintendent of the St. Louis County Hospital, Clayton, effective Dec 31, 1932.

**Bills Introduced**—S 39, to amend the law relating to privileged communications, proposes to permit attending physicians to testify, with or without the consent of their patients, in actions brought by the patients for damages for personal injuries. H 62 proposes to penalize persons who go from house to house "soliciting the opportunity to treat the sick or fit eye-glasses."

#### MONTANA

**Society News**—Dr George W. Swift, Seattle, as guest speaker, addressed the Montana Academy of Oto-Ophthalmology at its midwinter meeting in Butte, January 9, on eye and ear conditions in brain tumor, and injuries to the brain. Dr Lawrence G. Dunlap, Anaconda, was elected president, and Dr Ashley W. Morse, Butte, secretary. Dr Swift conducted a clinic before a joint meeting of the Silver Bow County Medical Society and the Mount Powell Medical Society, January 10, in the evening he gave an address on brain tumors. He also conducted clinics in Anaconda, January 11, and Bozeman, January 12.

#### NEBRASKA

**Bills Introduced**—S 47 proposes to require applicants for licenses to marry to present to the proper county judge affidavits that both parties are free from venereal disease. S 62 proposes to make incurable insanity of at least five years' duration a ground for divorce.

**Portrait Presented to Hospital**—An oil portrait of Dr John Prentiss Lord, attending orthopedic surgeon to Bishop Clarkson Memorial Hospital, Omaha, was presented to the hospital by the staff, Dec 4, 1932. Dr Charles F. Moon presided at the presentation ceremony, in which other participants were Drs Charles W. M. Poynter, Albert F. Tyler, John B. Potts, all of Omaha, and Hiram Winnett Orr, Lincoln.

**Society News**—The staff of the Douglas County Hospital, Omaha, presented a program of case reports at the meeting of the Omaha-Douglas County Medical Society, Omaha, January 10.—Dr Thomas G. Orr, Kansas City, Mo., addressed the Lancaster County Medical Society, January 3, on "Management of Acute Intestinal Obstruction." Drs Joseph J. Hompes and David G. Griffiths, Lincoln, addressed the society, January 17, on cataract operations and care of the insane and defectives, respectively. Drs James E. M. Thomson and Walter W. Carveth, Lincoln, will speak, February 7, on arthritis.

#### NEW YORK

**Health at Utica**—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended January 7, indicate that the highest mortality rate (207) appears for Utica and the rate for the group of cities as a whole, 135. The mortality rate for Utica for the corresponding week in 1932 was 168 and that for the group of cities, 121. The annual rate for eighty-five cities for the two weeks of 1933 was 136, as against a rate of 125 for the corresponding period of 1932. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

**Bills Introduced**—S 144 and A 75, to amend that section of the workmen's compensation act requiring an injured employee to submit to such physical examination as the department of labor or the industrial commissioner may direct, propose to strike out the clause in the present law which permits the employee or the insurer at its own expense to select a physician to participate in the examination. A 131 proposes to accord to hospitals supported in whole or in part by charity and treating persons injured through the negligence of another, liens on all rights of action, suits, claims, counterclaims or demands accruing to the injured persons because of their injuries. A 130, to amend the workmen's compensation act, proposes to make compensable all occupational diseases received in the course of an employment covered by the act. S 139, to amend the workmen's compensation act, proposes, in effect, to make compensable all occupational diseases contracted in the course of any employment covered by the act. S 142, to amend the medical practice act, proposes to permit the board of regents to restore a license to a person whose license had been forfeited by conviction of a felony, if such person is pardoned by the governor of the state or by the President of the United States, of the felony of which he was convicted. The present law does not permit the board to waive such a forfeiture if the person has been convicted of felony arising out of his professional conduct. S 181, to amend the agriculture and markets law, prohibits the sale of any beverage containing saccharine, "unless the saccharine content thereof be disclosed, by label or other means, on the bottle or other container." A 181 proposes to penalize "any person who experiments or operates in any manner whatsoever upon any living dog, for any purpose other than the healing or curing of such dog."

#### New York City

**Fourth Harvey Lecture**—Dr Harvey Cushing, formerly Moseley professor of surgery, Harvard University Medical School, Boston, delivered the fourth Harvey Lecture at the New York Academy of Medicine, January 19, on "Dyspituitarism Twenty Years Later."

**Alien Employees Dismissed from City Hospitals**—More than 1,400 aliens employed by the city department of hospitals have been discharged under an order issued, Dec 5, 1932, by Dr J. G. William Greeff, commissioner of hospitals. Only about 600 will be replaced because of the reduced budget of the department. Aliens who had applied for their second naturalization papers, wives of citizens, teachers in nursing schools, persons in the state militia, veterans of military or naval service, and persons ten years or longer in the city pension system were exempted. The salaries paid to the total number of alien employees amounted to about \$305,000.

**Academy Requests Legislation on Medicinal Liquor**—The New York Academy of Medicine, through a committee headed by Dr Samuel W. Lambert, has sent to each member of the United States Senate a letter asking his cooperation in obtaining relief for the medical profession from the provisions of the prohibition laws. The letter expresses the opinion that the present limitations on the quantity to be prescribed and the time limit for renewal amounts to a complete prohibition. A test case having been decided adversely, the academy has concluded that relief is available only by an appeal to the



legislative branch of the government, the letter continued. It concluded by urging that "remedial measures be adopted by the Congress to give relief to the ill and suffering citizens who are under treatment at the present time and in the future and that this be done by Congress as a proper action to right a wrong and not allow the question to be settled solely by repeal of the Eighteenth Amendment but as it should be, by meeting its correction through direct action."

**Annual Health Record**—The general death rate for New York for 1932 was 10.3 per thousand of population, the lowest ever recorded, the annual report of the city department of health shows. Infant mortality also reached a new low point, 50.92 per thousand births. The total number of deaths in the city was 74,319, compared with 77,418 in 1931. Heart disease was the leading cause, being responsible for 18,909 deaths, cancer caused 8,752, pneumonia, 7,474, and pulmonary tuberculosis, 3,995. A marked increase in diabetes was reported, the death rate having increased from 24.8 in 1928 to 29.3 in 1932. The commissioner pointed out that although the number of deaths from tuberculosis had declined, the severe economic stress has already manifested itself in an increase in new cases, which will soon be reflected in the death rate unless conditions improve. To counteract this trend the department is intensifying its control measures, concentrating especially on the 45,000 Puerto Ricans in the city, among whom the death rate is six times that of the city at large. A falling off in the number of children immunized against diphtheria resulted in an increase in the death rate from 35 per hundred thousand children under 5 years old to 41.2. An analysis of the mortality statistics for 1930 compared with those of 1902 showed that death rates from all causes for both men and women had declined markedly in the age groups above 45. This apparently contradicts statements that the older groups of the population are dying at a faster rate than they did a generation ago, the report says, and that public health activities have mainly effected reductions in deaths of infants and children.

#### NORTH CAROLINA

**Personal**—Dr. Julian W. Ashby, assistant superintendent of Central State Hospital for the Insane, Raleigh, has been appointed superintendent to succeed the late Dr. Albert Anderson.

**Bill Introduced**—H. 15 proposes to repeal the law requiring applicants for marriage licenses to present certificates from licensed physicians, certifying to the absence of certain diseases in the parties to the proposed marriages.

**Society News**—The Robeson County Medical Society, Lumberton, has arranged to examine school children of the county especially those who are repeating their grades.—Dr. Charles Reid Edwards, Baltimore, addressed the New Hanover County Medical Society, Wilmington, Dec. 16, 1932, on the treatment of cancer.

#### NORTH DAKOTA

**Bill Introduced**—H. 37 proposes to require all public hospitals under the control of religious or charitable institutions and used wholly or in part for public charity to maintain rooms where bodies of patients who have died may be prepared for burial.

#### PENNSYLVANIA

**Bills Introduced**—S. 101 proposes to create a naturopathic board of education, examination and licensure in the department of education and to regulate the practice of naturopathy, defined as the use and practice of that philosophy of healing embodying within itself a complete system of therapeutics, basing the treatment upon all of the physiological dysfunctions and abnormal conditions of the body, on the natural laws governing the body and maintaining life further, the correlation of part with part, anatomical, physiological and chemical, the treatment of the sick by any movements, adjustments or manipulations performed by the hands or by any instruments or appliances and the use of any of the physical forces such as air, light, water, heat, electricity or any of their derivatives or any other system or systems of therapeutics correlated with the above therapeutic measures and the use of nontoxic herbs and plants either administered, dispensed or prescribed, minor surgery and chirotherapy as a first aid and emergency measure, the use of antiseptics, antidotes and anæsthetics. Practitioners are not to be authorized to practice materia medica, surgery or medicine. Future applicants for such licenses must be high school graduates, have had one year of college physics, chemistry and biology and have graduated from a naturopathic school and in a 115 examination is given by the board. Present

practitioners and students now in naturopathic schools to be licensed must pass an examination but need not conform to the educational requirements noted above. H. 139 proposes to accord to the state and to every charitable institution rendering hospital care to a person injured through the fault of another, a lien for the amount of the hospital charges on all rights of action, suits, claims, or demands which may accrue to such injured person as a result of his injuries. This lien, however, may not exceed 50 per cent of the award, verdict, settlement, or compromise received by the injured person. S. 137 proposes that any court hearing an action for the discharge of a patient from any of the state institutions for mental defectives and epileptics may "at its discretion admit in evidence the sworn statement of the physician in charge of the hospital, his assistant or the physician in charge of the patient, as to the condition of the patient, without the necessity of the appearance and personal examination of such physician."

#### RHODE ISLAND

**Bill Introduced**—S. 11 proposes to require hospitals receiving state aid to treat all persons who, in the opinion of the medical examiner of the district in which the applicants reside, are proper and fit subjects for hospital care.

#### TEXAS

**State Health Officer Appointed**—Dr. John W. Brown, Maria, has been named state health officer to succeed Dr. James C. Anderson, who has served six years. Dr. Brown is a graduate of Vanderbilt University School of Medicine, Nashville, Tenn., class of 1910.

**Bill Introduced**—S. 19 proposes to accord to hospitals or clinics rendering hospital services, caring for persons injured through the fault of another, liens limited to \$7 for each day of treatment, on any rights of action, recoveries or settlements accruing to the injured persons by reason of their injuries. This lien, however, is not to attach to claims or recoveries under the employer's liability act.

#### WASHINGTON

**Survey of State Health Service**—Dr. Leslie L. Lumsden of the U. S. Public Health Service has recently made a comprehensive survey of all public health activities in Washington and presented recommendations for improvement. Dr. Lumsden recommended first a reorganization of the state board of health to include twelve members representing organized physicians, dentists, engineers, lawyers, bankers, farmers, labor leaders, women's clubs, parents and teachers, restaurant and hotel keepers. This board, members of which would serve terms of four years each, would elect the state health director, who would be executive officer but not a member of the board. He recommended the creation of divisions of county health work, communicable disease control and vital statistics and the consolidation of the divisions of child hygiene and public health nursing. Appropriations for public health work should be increased threefold. Dr. Lumsden's report declared, and the state department should have additional funds to allot to county or district health units according to local needs. When county health units are organized, all other health units in the county should be abolished except those in cities of the first class, according to the recommendations, but cities of the first class should be enabled to combine with the surrounding or adjacent county or counties to form a unified health jurisdiction if desired. Dr. Lumsden also recommended that sanitary control of milk and health activities in the public schools be made functions of the official health agencies. His final suggestion was that all state and local civic organizations appoint special committees to advise and cooperate with the official health agencies in the maintenance of an adequate public health program.

**Bills Introduced**—S. 16 proposes to levy on every practitioner of the healing art an annual tax equal to three-tenths of 1 per cent of the sum obtained by subtracting \$1,200 from his gross professional income. Any practitioner, however, who is employed on a full time basis by another person, by the state or by a county or municipality is to be exempt from this tax. S. 42 proposes to repeal the law authorizing the sexual sterilization of certain socially inadequate inmates of state institutions and certain types of habitual criminals. It proposes to enact what are probably the most sweeping provisions with respect to sexual sterilization that have ever been presented to an American legislature. The bill seeks to authorize the asexualization of the "socially inadequate classes" whether inmates of institutions or not. These classes, the bill states "regardless of etiology or prognosis, are the following



(1) feeble-minded, (2) insane (including the psychopathic), (3) criminalistic (including the delinquent and wayward and inmates of state institutions), (4) epileptic." H 20 prohibits physicians, sanipractors, chiropractors, osteopaths, dentists and optometrists, and any group thereof, (1) from employing in their practice "any method, plan or system not available and open for free use by all qualified and legal practitioners" and (2) from advertising or permitting themselves to be advertised as employing any such method, plan or system. A violation of this act is to be a cause for the revocation of the license of an offending practitioner. H 33 prohibits corporations from engaging in the practice of medicine, sanipractic, chiropractic, osteopathy, dentistry or optometry. S 12 proposes to authorize the establishment and maintenance of a state institution for the confinement, cure, care and rehabilitation of drug addicts. S 13 proposes to repeal the present laws regulating the possession and distribution of narcotic drugs and to enact a law regulating the possession, dispensing or sale or other distribution of opium, coca leaves, cannabis indica, cannabis sativa, and marihuana.

### WEST VIRGINIA

**Society News**—At a meeting of the Mercer County Medical Society, Bluefield, Dec 17, 1932, speakers were Drs Charles T St Clair, on otitis media, Harry G Steele, binocular twins, and Clifton J Reynolds, resection of the hypertrophied prostate.—Dr Harry M Stein, Baltimore, addressed the Eastern Panhandle Medical Society, Dec 14, 1932, in Martinsburg on clinical diabetes.—Dr William S Middleton, Madison, Wis., addressed the Ohio County Medical Society, Wheeling, Dec 16, 1932, on "Oxygen Therapy in Cardiorespiratory Conditions." Dr Frederick M Allen, New York, spoke before the society, January 6, on "The Use of Insulin in Treatment of Tuberculosis."

### WYOMING

**Bills Introduced**—S 6, to amend the medical practice act, proposes to provide a penalty for any person practicing medicine, surgery or obstetrics without having first received and recorded a certificate from the state board of medical examiners. H 12 proposes to authorize the sexual sterilization of insane, idiotic, imbecile, feeble-minded or epileptic inmates of state institutions.

### GENERAL

**Use of Local Hospitals for Veterans**—The *Saturday Evening Post* in an editorial, January 7, recommended that the government use vacant accommodations in local hospitals for the care of war veterans. The editorial called attention to the fact that physicians and hospitals are now under greater pressure than ever before, with more calls for free service and fewer paying patients to offset their cost, yet more special hospitals are being built for care of sick and disabled veterans. "Local hospitals are local enterprises and they are usually sponsored by the best element in their communities," the editorial continued. "The government, instead of setting up destructive competition with these quasi charities, should utilize their vacant accommodations and pay a fair price for service rendered. Such a policy would be to the interest of veterans and would react favorably upon struggling institutions from coast to coast."

**Delegation to Gorter Conference**—American delegates to the International Gorter Conference in Berne, Switzerland, August 10-12, will sail from New York, July 26, and reach France, August 6. In the course of the passage a program of round table discussions on gorter will be conducted each day. The official delegation will include the officers and members of the council, geographic delegates and delegates at large from the American Association for the Study of Gorter, and representatives of gorter clinics, of national medical and surgical organizations of the United States and Canada, and of the medical departments of the U S Army, Navy and Public Health Service. Members of the profession in good standing in their state or provincial societies who may wish to join the delegation in an unofficial capacity may do so by communicating with the geographic delegate of their section or with Dr Julius R Yung, Terre Haute, Ind.

**Investigation of Effect of Depression on Nutrition**—A conference of health authorities representing nine nations was held in Berlin, Dec 5-7, 1932, under the auspices of the Health Section of the League of Nations, to organize a plan of study to determine the effects of the economic depression on individual nutrition and family life in general. Dr Kenneth D Blackfan, Thomas Morgan Rotch professor of pediatrics Harvard University Medical School Boston and John R Murlin, D Sc, professor of physiology, University of Roch-

ester, Rochester, N Y, represented the United States. As it is desired to spread the investigation over the largest possible number of persons, the conference decided to use only simple methods that can be speedily applied to groups of 10,000 or more persons. As an index of nutrition, weighing was recommended first and determination of height second, particularly by the technic of Pirquet. Clinical appraisal of color of skin, condition of subcutaneous fat, water content of tissues and condition of muscles was also recommended. Examinations should be repeated at intervals, and evidences of vitamin deficiency should be carefully watched, the committee recommended. It was proposed that the results of the conference be submitted to and carried on by the public health authorities concerned. The conference also considered that it would be helpful if public health authorities would forward to the Health Section of the League all data already available on this subject, details of organization in their countries and further results as they become available. Countries represented at the conference were Italy, Great Britain, Germany, France, Denmark, Belgium, Austria, Holland and the United States.

**Medical Bills in Congress**—*Change in Status* H R 14199, the War Department Appropriation Bill, has been reported to the House. It provides that none of the funds appropriated therein "shall be available for any expense on account of any student in Air Corps, Medical Corps, Dental Corps, or Veterinary units not a member of such units on May 5, 1932." **Bills Introduced** S 5389, introduced by Senator Copeland, New York, proposes to strike from the National Prohibition Act the provision relating to prescription forms and to substitute therefor a provision authorizing the Commissioner of Prohibition to furnish physicians with stamps to be affixed on each prescription for medicinal liquor. S 5429, introduced by Senator Shipstead, Minnesota, proposes to amend the World War Veterans' Act to provide disability compensation for representatives of the American Red Cross, the Young Men's Christian Association, the Knights of Columbus, the Jewish Welfare Board, the Salvation Army, and all kindred American organizations engaged in similar work who were sent overseas and who served in welfare work with the military or naval forces of the United States, if disabled from personal injury suffered or disease contracted while performing such welfare work. H R. 14136, introduced by Representative Fish, New York, proposes to prohibit the importation of cannabis indica, cannabis sativa or cannabis americana.

### FOREIGN

**Influenza Epidemic in England**—Deaths from influenza in England and Wales totaled 1,041 the week preceding January 19, compared with 681 the previous week, newspapers reported. As a result of the spreading of the disease, all schools in Swansea were to have been closed, following similar action in other towns, it was stated.

**Medal Awarded to Priestley Smith**—The Swedish Medical Society has awarded the Gullstrand Gold Medal to Priestley Smith, emeritus professor of ophthalmology, University of Birmingham, England, for his "ophthalmological researches, especially regarding glaucoma and the permanent growth of the lens," according to the *British Journal of Ophthalmology*. This medal was instituted in 1922 in honor of the late Professor Gullstrand and has not been awarded since that date.

**Institute for Medical Psychology**—New headquarters for the Institute of Medical Psychology, London, formerly known as the Tavistock Square Clinic, were opened, Dec 9 and 10 1932. Sir Walter M Fletcher, secretary of the General Medical Council, Dr Bernard Hart of University College Hospital, Dr Walter Langdon Brown of St. Bartholomew's Hospital, and Dr William W Jameson of the London School of Hygiene made addresses at the dedicatory ceremonies. The building, which is a remodeled garage, contains seventeen consulting rooms, library, laboratory, a lecture hall and various offices.

**East African Medical Congress**—To celebrate the centenary of the British Medical Association, constituent East African branches met in Nairobi, Oct 5-8, 1932. This meeting was said to be the first since 1920 at which representatives of the various territories had been brought together. Sir Joseph Byrne, governor of Kenya presented the Northern Persian Forces Medal to Lieut.-Col Neil McLean, Montreal, Que., Canada. Papers discussed during the three day meeting included those on medical problems in the equatorial regions, influence of obstetric conditions on vital statistics in Uganda, ocular manifestations of vitamin A deficiency and cutaneous manifestation of a syndrome associated with vitamin A deficiency. One day of the session was devoted chiefly to the consideration of tuberculosis as it affects the African.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Dec 31, 1932

#### Advice on Nutrition

The ministry of health has issued advice to local authorities and to maternity and child welfare centers with regard to administration of iron to prevent the nutritional anemia of infants. The ministry has also given advice on other nutritional defects. A considerable amount of work has been done on the etiology of rickets and dental decay, the medical research council having published six special reports on the former and five on the latter. Severe rickets is rapidly disappearing in this country, but in some areas milder forms are still widely prevalent. The ministry points out that it has been established that, given an adequate amount of calcium and phosphorus in the diet, vitamin D will prevent and cure rickets. Both for the prevention and the cure of rickets and to insure proper development of the teeth, the diet of pregnant and nursing mothers and of young children should contain sufficient of the three ingredients mentioned. Of these, vitamin D is the most apt to be deficient. When lack of funds prevents the purchase of such vitamin-D containing substances as eggs and butter and adequate supplies of milk, the value of fat fish, such as herrings, sprats and mackerel, should be borne in mind. When margarine is the chief source of fat in the diet, those brands which contain vitamins A and D should be secured. Also cod liver oil may be supplied. It has been shown that the addition of this to the diet of children on what is regarded as an adequate diet decreases the rate of progress of caries. Viosterol has a similar effect. All medical officers, particularly those in charge of infant welfare centers, antenatal hospitals and hospitals for pregnant women, are advised to take all possible steps to secure an adequate supply of vitamin D in the diet. A third recommendation is the importance of milk in the dietary of growing children. It is an almost perfect food, though deficient in iron and water-soluble vitamins. It is rich in calcium and phosphorus and protein of high biologic value important in building up a sound physique. An experiment was reported by the medical research council which showed that the addition of a pint a day of pasteurized milk to a dietary, apparently satisfactory, of boys of school age produced an immediate improvement in physique and general health, as well as an increase in weight and height measurements which was not a temporary phase but was continued over a period of one, two and three years.

#### The Climbing of High Mountains

The attempts to climb Mount Everest, the highest mountain in the world are to be continued. In a letter to the *Times* Sir Leonard Hill the physiologist who has given special attention to problems of respiration points out that Dr Argyll Campbell has shown at the National Institute for Medical Research that animals when exposed to gradually decreasing oxygen pressure exhibit all the signs of acclimatization which occur in men climbing to high altitudes. At a pressure corresponding to the top of Everest they exhibit anorexia, weakness and air hunger signs inevitable above 20,000 feet however acclimatized the climbers may be to lower levels. Many animals were exposed to the pressure of the top of Everest for periods up to eight days and recovered on being brought back to normal pressures. Those examined post mortem showed degeneration of the heart and other organs. Degeneration began with oxygen pressure corresponding to any height above 20,000 feet when the power of the red cells to combine with oxygen rapidly decreases. No climber has stayed for more than a

day above 26,000 feet and returned alive. The breathing of oxygen makes quite easy the attainments of altitudes far higher than the top of Everest. Captain Unwins recently flew to about 44,000 feet with the help of an oxygen breathing apparatus. Experimenting with a steel chamber filled with oxygen, Sir Leonard Hill found that a goat sat down when the pressure fell below 100 mm of mercury and a monkey closed its eyes and slept when the pressure fell below 120 mm. Serious signs occurred at pressures below 90 mm, but recovery at once took place when more oxygen was let into the chamber. Sir Leonard considers that, given a sufficient supply of oxygen, Everest can be climbed from the base camp with no more difficulty than an Alpine peak. He recommends that the oxygen apparatus be carried to the higher camps and that two selected climbers, who have not carried it, should then use it for higher climbing. He considers that there is a great risk in climbing to great heights without the use of an oxygen apparatus, for not only is the inefficiency of the climbers great but power of judgment fails. If a climber is to succeed without oxygen he should be in an extremely fit condition and not spend many days above 20,000 feet.

Brigadier E. F. Norton, who was a member of the Mount Everest expeditions of 1922 and 1924, replying to Sir Leonard Hill, agrees that oxygen would be of the greatest service to climbers but points out that the apparatus so far produced has been so heavy and clumsy that it tended to handicap rather than to help the user. In 1924, probably from some defect in the apparatus, none of the members of the Mount Everest expedition who used oxygen were conscious of any benefit. On the other hand, there is clear evidence that climbers unequipped with oxygen can sleep comfortably at 27,000 feet and then climb to heights greater than 28,000 feet without serious after-effects. He argues that the difference between 28,000 and 29,000 feet is so small as to be almost negligible. The whole trouble is the lamentably slow pace to which climbers are reduced at those extreme altitudes. This fact was not sufficiently appreciated in the past, with the result that the highest camp was pitched too low. Today more is known as to what must be done: the highest camp must be well above 27,000 feet. Brigadier Norton holds that the success of the 1933 expedition will be decided by the position of the highest camp, which in turn will depend on the morale of the porters.

#### Plastic Surgery in Chronic Radiodermatitis

At the annual congress of the British Institute of Radiology, Sir Harold Gillies, who is well known for his plastic work on war wounds, and Mr. McIndoe made an important communication on the treatment of radiodermatitis. They pointed out that chronic ulcerative dermatitis, once established, admitted of treatment only by complete excision, which was followed by rapid relief and freedom from the risk of carcinoma. They divided the patients into three groups: (1) those who received a single dose, not always an excessive one, (2) those who had received small but repeated doses over a long period, with chronic dermatitis progressing slowly to sluggish necrosis, often resulting in ulceration, (3) professional workers with burns of the hands and face. Cancer has not been found in the first group, is not uncommon in the second, and is common in the third. The effects are attributable to obliteration of vessels and loss of function of the cells of the irradiated area. In the acute stages the lesion consists of a central slough surrounded by inflamed skin and there is no line of demarcation between healthy and devitalized skin. Therefore too early excision and grafting is hazardous. The chronic form may follow the acute or may exist from the first. The ulcer is indolent and covered with crusts and is incapable of regeneration. Fixation to deeper structures is not uncommon, and the skin surrounding the ulcer is converted into a pachydermatous and apparently lifeless, devoid of hair and secretions and disfigured by keratosis and telangiectasis. The final phase

usually occurs years after exposure to the rays has ceased. The whole area of chronic radiodermatitis can easily be dissected off. Conservative treatment is hopeless, and excision of all devitalized tissue is essential. The indications for operation are (1) pain, itching, ulceration and discharge, (2) deformity from contraction, (3) disfigurement, (4) epitheliomatous change. If the rindlike superficial tissues are pulled on, a cleavage plane is easily found and the excision can be extended into healthy tissue on all sides. If there is a suspicion of epithelioma, the diathermy knife should be used. Grafting is then done. Thick razor grafts are satisfactory for the hands, scalp and eyelids and back. Pedicle flaps are useful when much tissue has been lost, when appearance is important, and when a mobile structure is required, e. g., on cheek, neck and joints. Successful grafting can be more confidently predicted than in the case of burns from fire.

#### British Tribute to W. S. Thayer

The death of W. S. Thayer is much regretted in this country, where he had many friends and was regarded as the successor to Osler in America. He was one of the only three foreign honorary members of the Association of Physicians of Great Britain and Ireland. His literary powers were especially admired. In 1927 he gave the address "Richard Bright: The Man and the Physician" at the centenary celebration at Guy's Hospital of the publication of the first volume of that great clinician's "Reports of Medical Cases." Dr. J. W. McNee describes him as "a physician of the old cultured general school, carrying on nobly the tradition begun at Johns Hopkins by his medical hero, chief and friend, William Osler."

#### PARIS

(From Our Regular Correspondent)

Dec. 14, 1932

#### Gold Therapy in Tuberculosis

The treatment of pulmonary tuberculosis with gold salts continues to be a live topic of discussion among phthisiologists. A large number of these have called attention to untoward incidents and accidents which they have observed in connection with gold therapy and which, in their opinion, constitute contraindications to the use of the method. Tuberculous patients presenting an insufficiency of the organs through which the elimination of the gold is accomplished (liver, kidney, intestine) should be excluded from this treatment. The harmful effects bear chiefly on the components of the blood, the endothelium of the capillaries, and the reticulo-endothelial tissues. The accidents most commonly observed are agranulocytosis, purpura hemorrhagica, icterus, nephritis and aplastic anemia. The multiplicity and the variety of these accidents are explained, according to Professor Chevallier, by the selective attack, varying with the case, on the various constituent elements of the blood and of the blood vascular system. If the gold exerts its toxic action chiefly on the red corpuscles, one observes a grave anemia. If the action is exerted on the white corpuscles, one notes the agranulocytic syndrome. If the action is on the blood platelets and on the endothelium of the capillaries, it leads to purpura hemorrhagica. In a case of Achard, Coste and Cahen, the proportion of polymorphonuclears dropped to 6 per cent and even to 1 per cent. Jacquelin and Alanic reported a fatal case of progressive hemorrhagic aplastic anemia. An analogy is evident with the accidents caused by arsphenamines. Accidents from gold therapy may be provoked by any gold compound. The accidents vary in different cases, depending somewhat on the dose. Predisposing conditions impose on the physician an almost daily surveillance of the patient during the course of treatment through an examination of the blood, with interruption of the treatment at the first alarm. Another group of phthisiologists is less pessimistic. Ameuille, the principal advocate of gold

therapy in France, uses large doses, which, in his opinion, are alone active. Brodier and Lefevre, other advocates of gold therapy, consider it only as an adjuvant to rest treatment and artificial pneumothorax. Gold salts in oil solution are recommended by Fournier and Mollard as giving better results than salts in an aqueous solution. The action is slower but more prolonged and less destructive. Prof. Leon Bernard, of the Faculté de médecine de Paris, presented recently, before the Academy of Medicine, a survey of the question. He is an ardent advocate of sodium thiosulphate. His statistics covered 716 cases. Bernard employs moderate doses in the acute cases. The treatment is not interrupted except for toxic manifestations. He has never encountered a grave intoxication. The favorable results are the disappearance of the clinical symptoms and the retrogression of the lesions, which may go so far as complete radiologic disappearance. This is not usually accomplished, however, until a long time has elapsed. Statistics show, he says, that clinical recovery or notable improvement ranges around 50 per cent of the cases so treated. Bernard holds that gold therapy should be given chiefly in the evolutionary forms and in cases in which pneumothorax is impossible or ineffective.

#### The Supervision of Clinical Thermometers

For some time the group that has charge of the testing of clinical thermometers has been overwhelmed with work. The production in France of clinical thermometers amounts to 1,840,000 a year, whereas the capacity of the testing laboratories, established by law, is only 1,400,000. The testing personnel installed at the Conservatoire des arts et métiers in Paris comprises forty-three women testers and eighty-five assistants, but, in spite of this diligence, the average number of thermometers tested each month, during the last four months of the year, was 114,504 whereas the number of new instruments presented each month during that period was 147,127. To remedy this deficiency, which works a hardship on the manufacturers, the government proposes an increase, at this time, of the testing personnel by thirty-three women testers and 100 assistants. The cost of this supervision during the past five months was about \$54,000, which is covered by the nearly \$64,000 derived from fees. But the bill providing increased facilities, although presented July 16, has not been voted on by parliament.

#### The Number of Automobile Accidents

The minister of the interior has published a report on the accidents caused in France by automobiles. The minister emphasized the shocking number of accidents, without taking account of the increasing number of cars in use and the more crowded conditions on the highways. If one takes account of these factors there has been, in a sense, a diminution of accidents. The statistics reveal much better conditions than in other countries. A survey of the accidents during the period 1924-1930 shows the following:

Years	Fatal Accidents	Total No. of Cars in Use	No. of Accidents per 100,000 Cars
1924	1,626	716,951	225
1925	2,089	868,225	240
1926	1,160	974,699	222
1927	2,379	1,208,847	197
1928	2,941	1,417,755	207
1929	3,717	1,701,680	218
1930	3,120	1,951,712	201

In England, last year, there were 6,696 deaths due to automobile accidents and in the United States there were 33,600 deaths and 1,200,000 injuries. The record of France is a little lower than that of Germany. Nevertheless, the minister of the interior recommends greater severity in the examinations for drivers' licenses. The percentage of rejected applicants

ranges at present between 20 and 30, the rejections being based most frequently on an inadequate knowledge of the rules of the road. The question has been brought up again of the value of a physical examination of drivers in order to detect imperfections of eyesight or hearing, arterial sclerosis, cardiac lesions, and unstable emotions, which play an important part in most accidents in which women drivers are involved. A physical examination is already required of drivers of public vehicles, since the companies to which these belong wish to avoid having to pay too large amounts as damages, in case of accidents. A physical examination of drivers of private automobiles, while it appears desirable, has not appeared feasible, because of the immense number and the cost. A physical examination is, however, required of drivers who have been in an accident. It is thought that gradually a physical examination may be required of all new drivers by requiring them to present an insurance contract and then urging the insurance companies not to issue a contract to persons who fail to present a certificate showing a satisfactory medical examination.

### Diphtheria Antitoxin of Increased Potency

Dr Ramon, professor in the Institut Pasteur de Paris, is constantly working to improve his diphtheria antitoxin, the use of which as a vaccine is becoming more widespread, although it has the disadvantage of requiring three inoculations with rather lengthy intervals. In a recent communication to the Societe de biologie, in which Dr A. Berthelot collaborated, he announced that he had succeeded in obtaining a toxin and an antitoxin of greatly increased potency, which makes it possible to use only two inoculations. The potency of the toxins produced in the culture mediums used up to recent years was generally from 5 to 10 units. Toxins can now be obtained with a potency of from 15 to 20 units by using a nonfermented bouillon with dextrose. By adding to the latter a little sodium acetate, as a regulator of the reaction, according to the described technique, Ramon succeeded in securing toxins with a potency ranging between 20 and 30 units.

### BERLIN

(From Our Regular Correspondent)

Dec. 12, 1932

### Health Conditions in Germany

It is difficult to form an exact judgment of the health conditions among the population of Germany as a whole, as actual investigations on health conditions have not been made. It is possible, however, to survey health conditions among the insured part of the population up to the time of the last examinations. This survey, to be sure, pertains only to sick persons who are incapacitated. As a rule the number of persons who are ailing but who continue their work while under the care of a physician is considerably larger than the number of patients who are unable to work.

The relation of the incapacitated to those who are still able to carry on varies greatly in various sections. Whereas formerly the relation on the average, was as 1 to 3 or 4, the number of patients still able to work has declined in some places since the introduction of the emergency ordinances of 1930 and the recent insurance of all members of the family.

So while it is impossible to form exact opinions from the number of incapacitated patients as to health conditions among working patients the fluctuations in the number of incapacitated patients give an approximate idea of health conditions among the insured population. Such a computation is of great importance in judging health conditions among the German population because in the members of families are included two thirds of the population of Germany are included at present in the nation-wide health insurance system. The number of patients under the German insurance system has gradually declined during the past few years.

In the first quarter of 1929 the number of incapacitated patients averaged 57 per cent, in 1930, 40 per cent, in 1931, 39 per cent, and in 1932, 32 per cent. For the second quarter of the years 1928-1932, 39, 36, 33, 30 and 27 are the percentages recorded. For the third quarter the percentages were 38, 36, 32, 29 and 26. These figures indicate that the decline in the number of patients has continued up to recent times and that thus far there has been no reversion in the improvement of health conditions. In general, one has to count on an increase in patients during the fourth quarter, because the last months of the year bring many disorders associated with colds.

### Individual Instructions for Diabetic Patients

The Deutscher Diabetikerbund in Berlin-Charlottenburg has published a vade mecum for diabetic patients, a copy of which has been sent to all the internists of Germany. Any physician may secure copies gratis for his diabetic patients. The vade mecum is printed on thin cardboard, has a format of about 9 by 13 cm, and contains four pages. The purpose is that every diabetic patient shall receive a copy from his attending physician and shall always carry it with him and see to having the necessary items recorded in it. The vade mecum constitutes, as it were, a diabetic patient's passport, from which it appears at once what the state of metabolism is in the patient.

On the first page is the name, age, occupation, residence and telephone number of the patient, the name, residence and telephone number of the attending physician, and the quantities of carbohydrates, expressed in grams, that the patient is to receive morning, noon and night, also the name of the brand of insulin in use, the statement as to the time the patient received a dose of insulin, and the amount.

The second page discusses the purpose of the publication. Attention is called to the fact that the diabetic patient, in case of injuries received, is in graver danger than a healthy person and that often, in case of accident, the patient is unable, because of unconsciousness or shock, to give the physician summoned information in regard to his condition, but that the physician, by glancing at the first page, can inform himself on these matters. The value of the instruction card in case of hypoglycemic or diabetic coma is emphasized. The patient is urged always to carry the vade mecum with him and to see that any changes in his diet or his insulin prescription are promptly recorded on page 1.

Page 3 contains information intended for the physician. It gives the important points on the differential diagnosis and on the therapeutic management of hypoglycemic and diabetic coma. There may be objections to allowing the patient to carry instructions for the physician, but it cannot be denied that the two different types of unconsciousness are frequently confounded because the picture of hypoglycemic coma is not sufficiently well known.

On the fourth page there are a number of general hints for the diabetic patient. A few criticisms might, to be sure, be offered on the wording of the text. If the vade mecum is to fulfil its full purpose it must be carried at all times by diabetic patients, furthermore the actual intake of carbohydrates and of insulin must agree with the amounts given in the vade mecum. All physicians should be familiar with the vade mecum.

### Poliomyelitis in Berlin

The Berlin Stadtmedizinalrat Professor von Drigalski has published a report on poliomyelitis in the capital showing that up to Dec 8, 1932 196 cases were recorded of which twenty-three were fatal. Not only were young children affected but twenty-eight of the patients were more than 15 years old. No further cases were reported in December. The surprising observation was made that the incidence of the disease among the rural population was higher than among the urban population and that cities of medium size have relatively more

cases than the large cities, furthermore, the wealthier sections of the population present more frequent and more severe cases than the less well-to-do. In Berlin, an ordinance requires that all cases must be immediately hospitalized.

#### Occupational Skin Disorders

A bulletin published jointly by the federal health bureau and the Deutsche Gesellschaft für Gewerbehygiene calls attention to occupations that bring the worker in close contact with paints and dyes. Occupational skin disorders may thus be induced, resulting in continued incapacitation from work. Such disorders are caused not only by many work materials but also often by the continual use of unsuitable cleaning pastes and fluids. Persons with a sensitive skin should avoid work or callings in which soiling of the hands with paints, paint removers and the like is unavoidable. It should be noted also that, with the habitual use of paint removers and cleaning fluids, the hypersusceptibility that gives rise to a disease may not develop for several weeks or even months.

### ITALY

(From Our Regular Correspondent)

Nov 15, 1932

#### The Medicosurgical Society of Padua

At a recent meeting of the Società medico-chirurgica of Padua, Maurizio reported his observations on methods used for the biologic diagnosis of pregnancy, with especial reference to hydatidiform mole and chorioma. The original Aschheim-Zondek test has some disadvantages, as it requires the facilities of the larger institutes. For the general practitioner, the speaker said that it is sufficient, especially in cases of complicated pregnancy, to use immature male guinea-pigs and to observe macroscopically the changes that occur in the spermatic vessels after they have been injected with urine. The method proposed is remarkably simple and has been found practical, especially in cases of hydatidiform mole and of chorioma.

Sanesi dealt with the development of experimental tuberculosis in the collapsed lung. In experiments on the rabbit, in which collapse was brought about by means of pneumothorax or of oleothorax, he secured the following results. In animals with pneumothorax, tuberculosis transmitted by the tracheal route developed more extensively on the collapsed side. In the animals with oleothorax, tuberculosis developed less, or did not develop at all, on the collapsed side.

#### Meeting of Anatomists

The Società italiana di anatomia met in Pavia on the hundredth anniversary of the death of Antonio Scarpa, an anatomist of world-wide fame. Professor Pensa presided and professors from other Italian universities were present.

Prof. Achille Monti, in the inaugural address, said that Scarpa was distinguished not only in anatomy but in practically all branches of medicine, in which he made many discoveries. The speaker praised a pupil of the Pavia "school," the anatomist Alfonso Corti, famous for his discovery of the auditory organ termed "Corti's organ." Professor Turchini contributed a study on tactile corpuscles. Professor Villa explained the topography of Kupffer's cells in the liver. Professor Artom of Pavia spoke on the differentiation of the germinal cells in the intermediate sexual types. Professor Pensa presented a communication on the development of the lymphatic apparatus in birds. Cagliari was selected as the meeting place for the next congress.

#### Neuralgic Intermittent Fever

In a recent communication to the Società medica bresciana, Dr. Secchi called attention to a morbid syndrome that is not well known and which often misleads the physician. This syndrome is found frequently in persons with otitis, but it may

be observed in any superficial infectious lesion of the head and also in cases of general infection. In such patients there develops at times a neuralgia of the trigeminus, of an intermittent nature, accompanied by a fever that is also intermittent. The clinician and the otologist do not usually attach much importance to the syndrome. Sometimes, however, a painful surprise awaits them. The patient is attacked by a neuralgia more severe than usual and has a higher temperature, loses consciousness, lapses into coma and dies in from twenty-four to twenty-six hours. The speaker, who observed some of these cases, emphasized that when, in a person affected with otitis or some other infected focus of the head, an intermittent febrile neuralgia develops, even though the external lesions appear healed, a physician should think of the possibility of grave endocranial complications and should be reserved in his opinions as to the prognosis.

#### Congress of the Italian Ophthalmologic Society

The Società oftalmologica italiana held its annual congress in Parma. Prof. Donato Cattaneo of Turin presented the first official topic, which dealt with postoperative infections of the eye. The speaker stated that modern ophthalmologic science demands that all work be done under conditions of the greatest safety.

A committee was appointed to determine the values to be assigned in accidents affecting the eye so as to establish a basis to serve Italian specialists for official reference.

Professor Grosso announced that two prizes of the Istituto farmaco-oftalmico Lux (of \$275 each) have been awarded to Professors Ruata and Giannantonio and to Dr. Zanetti. The Cidonio national prize has been awarded to Professor Santonastaso and to Dr. Strampelli.

The congress adopted resolutions to the effect that (1) the government conduct a systematic inquiry into the incidence of trachoma in the Italian colonies of Africa and that the work of the Eye Clinic be included in the compulsory subjects for the government examination leading to the doctor's degree and the right to practice medicine and surgery. Rome was selected as the meeting place for the next congress.

#### Death of Professor Tizzoni

The death of Prof. Guido Tizzoni, until four years ago professor of general pathology at the University of Bologna, has been announced. Born in 1853, he was graduated young and at the age of 26 was already an instructor in pathologic anatomy at the University of Catania. A little later, after a competitive examination, he received a call to the University of Bologna. His scientific publications number several hundred and cover the period from 1875 to 1929. He devoted himself to studies in physiopathology, bacteriology and immunity. His first research concerned the regeneration of the kidney and the physiopathology of the spleen, thyroid, the suprarenal glands and the sympathetic nervous system. In bacteriology he began the study of cholera, but the work that contributed most to his fame was on the micro-organism and the toxin of tetanus. He succeeded in isolating the bacterium in pure culture simultaneously with, and independently of, Behring and Kitasato, and studied subsequently the method of attenuating the toxin in the preparation of a vaccine, the properties of the antitoxic serum, and the possibilities of using it in the prophylaxis and treatment of tetanus. Prophylaxis against tetanus by means of the Tizzoni serum was widely used in the Italian army during the war. The minister of war established in Bologna at that time a laboratory for the preparation of the serum, and Professor Tizzoni, with the rank of colonel, became its director. Other subjects treated by him were serotherapy of pneumococcal infection and the treatment of rabies with radium, which is still in the experimental stage. Professor Tizzoni held that the etiology of pellagra was more of a bacterial than an avitaminotic nature, but this question is not yet solved.



## MOSCOW

(From Our Regular Correspondent)

Dec 15, 1932

### Teaching Physical Culture to Physicians

The education of physicians who specialize in physical culture has been reorganized in the Soviet Union. Since 1931, the theory and practice of physical training has been obligatory for all students at the medical institutes. Chairs of physical culture under the guidance of special professors have been created. The educational plan requires sixty hours' work in the first three years of study, including the principles of Soviet physical training, and forty-eight hours for the next two years of training in curative physical culture. Every six days, students have an hour of practice in athletics so that every student will be able to demonstrate the methods he uses. In 1932, faculties of physical culture were founded at the Moscow and Leningrad medical institutes. Physicians who graduate from such a faculty will become specialists in physical culture. During their five years' training they study, in addition to medicine and general science, physical and social environment. The specialist in physical culture must know the theory and practice of physical culture, always remembering its biologic, educational and social significance. He must take an active part in the organization of sport in all its aspects everywhere at school, in industry and in the towns. He must be well acquainted with rational nutrition, so as to be able to advise sportsmen in training. He must be accustomed to the methodology of physical education and development, and thoroughly know anthropometry, physiology, hygiene and clinical methods, so that he can take part in scientific work. In many other medical schools, physical culture as a discipline is introduced, so that every physician will be acquainted with the program of contemporary physical culture. The work of a physician specializing in physical culture consists principally in organizing physical culture and in the methodical development and instruction of medical men. At present, there are in the Soviet Union about 420 physicians specializing in physical culture and 3,300 other physicians who have received special training in physical culture. For the three millions of people engaged in athletics, this number is small. That is why the increase in the number of physicians acquainted with medical physical culture is welcomed.

### A Soviet-German Medical Week

For years there have been close medical relations between the Soviet Union and Germany. Some years ago a week of Soviet naturalists was organized in Berlin, in Moscow an institute for studying the brain under the direction of Prof O Focht was founded, a Russian-German medical magazine was published in Berlin for several years. The aim of this journal was to acquaint readers with the medical progress and latest improvements in these countries. Many Soviet-German undertakings and experiments were organized, prominent physicians of the Union of Socialist Soviet Republics are continually visiting Germany. For further improvement of scientific relations a Soviet-German Medical Week was organized in Berlin, Nov 28-Dec 6 1932 on the invitation of the Berliner Medizinische Gesellschaft (chairman, Prof F Krauss) and the Ost Europ. Society.

The chairman of the Soviet delegation was Dr M F Vladimirsky, the commissar of public health. The members of the Soviet delegation included Prof S P Fedorov (surgery, Leningrad), the president of the Ukrainian Academy of Science, A A Bogomolietz (pathologic physiology, Kiev), Prof D D Pletnev (Moscow), A P Palladine (biochemistry, Charkov), author of works on pathologic anatomy, Prof A J Abrikosov (Moscow), Prof A P Vorobiev (normal anatomy, Charkov), the neuro-anatomist Prof A A Burdenko (Moscow), director of

the Moscow Tropical Institute, Prof E I Marzinovsky, Prof V M Bronner (venerology and skin diseases) and Prof B I Zbarsky (biochemistry, Moscow).

Professor Pletnev reported on a new method of treating angina pectoris by means of injecting 80 per cent alcohol into the cervical ganglions. Professor Abrikosov discussed tumors from embryonal muscular tissue localized in the tongue. Professor Burdenko reported on tropic ulcers following wounds of the nerves by firearms. In the ministry of public health, Prof V I Cholzman (Moscow) reported on the antituberculosis campaign. The number of tuberculous patients in the Soviet Union diminished 43.3 per cent in 1932. In Berlin scientific societies and clinics, members of the Soviet delegation read reports characterizing the progress of Soviet science in various fields of medicine. The Soviet delegates studied public health in Germany and the achievements of European medical science.

### Radiologic Treatment of Cancer

Soviet scientists are persistently working to find means of abolishing cancer, which every year claims many victims. In 1926 the mortality from cancer for every hundred thousand people was 142 for London and Leningrad, 131 for Paris, 148 for Berlin and 199 for Munich. The experiments of Professor Nemenov and his collaborators at the Leningrad State Scientific Roentgenoradiologic Institute have shown that tumors consisting of embryo cells—so-called embryocytomas—are highly sensitive to the gamma rays. Tumors that are more highly organized than those composed of embryo tissue, such as cancer of the lungs, esophagus and stomach, cannot be healed by this method.

No more surgical operations for cancer of the uterus are made in the clinic of the institute. In so-called operable cases, long time recoveries (five years after roentgen treatment) were obtained in 59 per cent. Analogous results were received from treating cancer of the tongue with combined roentgen and radium therapy.

### Death of Professor Oppel

The death of the prominent Russian surgeon Prof Wladimir Andreevich Oppel was reported, Oct 7, 1932, in Leningrad. He was born in 1872 and graduated at the Military Medical Academy in Leningrad. He went abroad and studied medicine under Virchow and Metchnikoff. In 1908 he was elected professor of surgical pathology and therapy, and later of the surgical clinic. From 1924 he was head of the surgical clinic of the Institute for Improvement of Physicians in Leningrad.

Professor Oppel published more than 170 scientific works on the mechanism and classification of fractures of the pelvis, endocrine disorders, gangrene and other subjects. He founded a school of surgeons, and many of his pupils are professors in Soviet universities. Several times he was elected president of the Russian Surgical Society. He was president of the Endocrinologic Society and from 1914 a member of the British Royal Surgical Society.

## Marriages

ARCHER L HURD Somers, Conn., to Miss Marion R Dougherty of Glen Ridge, N J, January 14.

EDWARD J CRANE Worcester, Mass., to Miss Louise E Dumont of Andover, in November, 1932.

CHARLES A WRIGHT, Delavan, Wis., to Mrs Martha Krastober of New York Dec 24 1932.

ALEX HOEKMAN Hartford Mich., to Miss Helen Perrin in South Bend Ind Nov 25, 1932.

ADOLPHUS KEITH DROZ to Miss Ruth Anderson, both of Washington Iowa Nov 16, 1932.



## Deaths

**Frederic Melancthon Briggs** ♂ Boston, Harvard University Medical School, Boston, 1883, assistant professor of clinical surgery, 1896-1897, professor, 1897-1912, and professor of surgery, 1912-1914, and since 1914 emeritus professor, Tufts College Medical School, secretary of the faculty, 1905-1914, on the staff of the Boston Dispensary in 1886, and surgeon, 1888-1912, aged 75, died, Dec 18, 1932, in the Palmer Memorial Hospital, of gangrene

**James Jay Weltman**, Chicago, Northwestern University Medical School, Chicago, 1923, member of the Illinois State Medical Society, formerly instructor in physical diagnosis at his alma mater, school health officer, Chicago Health Department, at one time on the staff of the Municipal Tuberculosis Sanitarium, aged 36, died, January 3, of pneumonia and cerebral edema

**Mahlon Frank Kirkbride**, Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1874, on the staffs of the Wills Hospital, Orthopedic Hospital and the Pennsylvania Hospital, aged 78, died, Dec 18, 1932, in the Monmouth Memorial Hospital, Long Branch, N. J., of enlargement of the prostate and cerebral thrombosis

**Rafael Gabriel Dufficy** ♂ San Rafael, Calif., College of Physicians and Surgeons of San Francisco, 1911, fellow of the American College of Surgeons, served during the World War, formerly member of the board of education, chief of the surgical service of the Ross (Calif.) General Hospital, aged 47, died, Dec 22, 1932, of heart disease

**Robert Fleming Rooney**, Auburn, Calif., McGill University Faculty of Medicine, Montreal, Que., Canada, 1870, member and past president of the California Medical Association, one of the founders and for eighteen years secretary of the Placer County Medical Society, aged 90, died, Dec 21, 1932, of cerebral hemorrhage

**Edwin Burd**, Lisbon Iowa, University of Pennsylvania School of Medicine Philadelphia, 1871, Hahnemann Medical College and Hospital, Chicago, 1882, member of the Iowa State Medical Society, for twenty-five years member of the school board, aged 86, died, Dec 5, 1932, of senility

**David Sanders Moore**, Altoona, Ala., Atlanta (Ga.) Medical College, 1880, member of the Medical Association of the State of Alabama, past president of the Blount County Medical Society, aged 80, died, Dec 9, 1932, in the South Highlands Infirmary, Birmingham, of pneumonia

**Luther Emerick**, Saugerties, N. Y., Albany (N. Y.) Medical College, 1900, member of the Medical Society of the State of New York, for many years member and president of the board of education, aged 65, died, Dec 25, 1932, of pneumonia and chronic valvular endocarditis

**Walter Claudius Keller** ♂ Genoa, Colo., Kansas City (Mo.) College of Medicine and Surgery, 1917, secretary and past president of the Kit Carson County Medical Society, served during the World War, aged 39, died, Dec 26, 1932, of pneumonia

**Otto Frank Zimmer**, Cleveland, Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1909, aged 46, died, Nov 10, 1932, of tuberculosis of the lungs and diabetes mellitus

**Charles Edward Schwartz**, San Francisco, College of Physicians and Surgeons, Los Angeles, 1908, served during the World War, aged 54, died, Dec 3, 1932, in Beresford, Calif., of gastric ulcer and uremia

**F. William Stechmann** ♂ New York, Cornell University Medical College, New York, 1905, member of the board of visitors of the Manhattan State Hospital, aged 63, died, Dec 20, 1932, of coronary thrombosis

**Henry Abraham** ♂ San Francisco, University of California Medical School, San Francisco, 1898, served during the World War, aged 59, died, Dec 14, 1932, in St. Francis Hospital, of carcinoma of the stomach

**Eugene Charles Thornhill**, New Orleans, Flint Medical College of New Orleans University, 1909, aged 51, died, Nov 29, 1932, in the Flint-Goodridge Hospital, of plastic peritonitis and intestinal obstruction

**John Ten Broeck Hillhouse**, San Francisco, College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, 1877, aged 84, died, Dec 5, 1932, in a local hospital

**Joseph Norton Bishop**, New York, Long Island College Hospital, Brooklyn, 1879, member of the Medical Society of the

State of New York, aged 88, died, Dec 11, 1932, in Stamford, Conn., of arteriosclerosis

**Robert Lee Rogers**, Fair Mount, Ga., Atlanta College of Physicians and Surgeons, 1903, member of the Medical Association of Georgia, aged 62, died, Dec 10, 1932, in a hospital at Atlanta, of septicemia

**Arthur Henry Stern**, New York, Long Island College Hospital, Brooklyn, 1909, member of the Medical Society of the State of New York, aged 46, died, Dec 14, 1932, of sarcoma of the mediastinum

**Albert G. Krueger** ♂ Caldwell, Texas, College of Physicians and Surgeons, Chicago, 1899, president of the Burleson County Medical Society, aged 63, died, Dec 5, 1932, of influenza and pneumonia

**Henry Stewart Fruitnight**, New York, University and Bellevue Hospital Medical College, New York, 1909, aged 48, died, Dec 7, 1932, of injuries received when he was struck by an automobile

**Richard Francis Duncan**, Providence, R. I., Albany (N. Y.) Medical College, 1889, member of the Rhode Island Medical Society, aged 67, died, Dec 9, 1932, of a self-inflicted bullet wound

**Wilson E. Wallace**, Santa Ana, Calif., American Medical College, St. Louis, 1892, aged 69, died, Nov 11, 1932, of carcinoma of the stomach, cerebral hemorrhage and bronchopneumonia

**Paul Rudolf**, Hinsdale, Ill., Hahnemann Medical College and Hospital, Chicago, 1885, formerly a druggist, aged 71, died, Dec 3, 1932, of chronic myocarditis and inguinal hernia

**John Wesley Graham**, Wetmore, Kan., Northwestern Medical College, St. Joseph, Mo., 1882, formerly mayor of Wetmore, aged 87, died, Dec 8, 1932, of organic heart disease

**Prentiss A. Carter**, Hattiesburg, Miss., Tulane University of Louisiana School of Medicine, New Orleans, 1896, aged 61, died, Dec 2, 1932, in a local hospital, of chronic nephritis

**Robert A. Hilton**, Altadena, Calif., College of Medicine and Surgery (Physio-Medical), Chicago, 1904, aged 71, died, Dec 3, 1932, of chronic myocarditis and coronary sclerosis

**Hermanus Ludwig Baer**, Mount Vernon, N. Y., Jefferson Medical College of Philadelphia, 1900, aged 59, died, Nov 25, 1932, of cirrhosis of the liver and cerebral hemorrhage

**William A. Laver**, Greenville, Ohio, Baltimore Medical College, 1895, member of the Ohio State Medical Association, aged 64, died, Dec 6, 1932, of cerebral hemorrhage

**Edward Norris Tull**, Fairland, Ind., University of Michigan Medical School, Ann Arbor, 1869, Civil War veteran, aged 91, died, Nov 26, 1932, of pneumonia

**James M. Smiley**, Yeagertown, Pa., University of the South Medical Department, Sewanee, Tenn., 1901, aged 65, died, Nov 7, 1932, of uremia and nephritis

**Joseph H. Huennekens**, Wauwatosa, Wis., College of Physicians and Surgeons of Chicago, 1890, aged 76, died, Dec 11, 1932, of uremia and chronic nephritis

**Frank M. Coppel**, Perris, Calif., Jefferson Medical College of Philadelphia, 1891, aged 68, died, Nov 15, 1932, of arteriosclerosis and cerebral hemorrhage

**Calvin B. Holcomb**, Bremen, Ohio, Cincinnati College of Medicine and Surgery, 1864, Civil War veteran, aged 94, died, Dec 1, 1932, of hypostatic pneumonia

**George Arthur Wilson**, Little Rock, Ark., Northwestern University Medical School, Chicago, 1908, aged 55, died, Oct 7, 1932, of poison, self-administered

**Jacob Henry Hoover**, Tillsonburg, Ont., Canada, Trinity Medical College, Toronto, 1887, medical officer of health, died, Nov 19, 1932, of heart disease

**Charles A. Curl**, Tehachapi, Calif., Chicago Medical College, 1885, aged 70, died, Nov 20, 1932, in Bakersfield, of lobar pneumonia and influenza

**Catharine A. Burnes**, Hopkins, Minn., Minneapolis College of Physicians and Surgeons, 1896, aged 83, died, Dec 10, 1932, of influenza

**Thomas S. Suleeba**, Grand Rapids, Mich., Rush Medical College, Chicago, 1892, aged 70, died, Dec 8, 1932, of pernicious anemia

**William Henry R. Huff**, Newark, N. J., St. Louis Medical College, 1886, aged 67, was found dead, in November, 1932, of heart disease

**Charles P. Kinney**, Crossville, Ill., Cincinnati College of Medicine and Surgery, 1877, aged 83, died, Dec 4, 1932, of myocarditis

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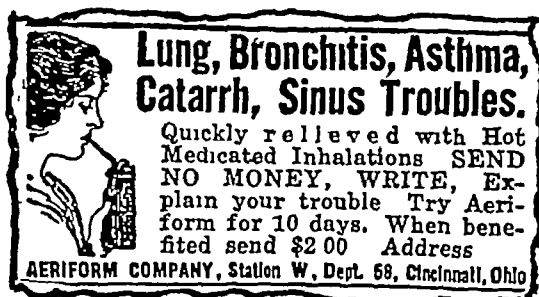
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1708 Broadway Dept. L-31 NEW YORK CITY

*American Vienna Company*.—The American Vienna Company of Battle Creek was a trade name used by Floyd R Perkins and Mrs E M Bover. These people have agreed to discontinue the use of the word "Vienna" in the trade name within six months and to discontinue representing that the product is a competent remedy for eczema, when such is not the fact.

**Aeriform Company**—This was a Cincinnati concern formerly known as the Aeriform Laboratories, which sold an inhaler and some medicated tablets for the alleged treatment of colds, catarrh and similar ailments. The company has agreed to discontinue representing that a month's treatment of the "Dr Beaty Blood Tonic" will be sent free to the purchasers of the inhaler, when actually the cost of this tonic is included



**Lung, Bronchitis, Asthma, Catarrh, Sinus Troubles.**  
Quickly relieved with Hot Medicated Inhalations. SEND NO MONEY, WRITE, Explain your trouble. Try Aeriform for 10 days. When benefited send \$2.00. Address: AERIFORM COMPANY, Station W, Dept. 68, Cincinnati, Ohio

in the price paid for the inhaler, and to discontinue representing that the Beaty Blood Tonic purifies the blood, and that the Aeriform vapor treatment is a competent remedy for lung trouble and catarrh, when such are not the facts

**Young's Victoria Cream**—This preparation, sold by the Frederick H Young Company of Toledo, was alleged to correct all skin troubles. The vender has agreed, among other things, to discontinue representing that the cream will, in a short time, remove all skin blemishes

**French Vigortabs and Toniquettes**—Carroll V Giantrapani, who did business under the trade name Modern Sales Company and also La France Laboratories Company, both of New York City, sold "French Vigortabs" and "French Toniquettes." These were alleged to be "pep" tablets. Giantrapani has agreed to discontinue advertising the product or any similar medicinal preparation, and to discontinue its sale in interstate commerce



**FRENCH TONIQUETTES**  
A HIGH POTENCY TONIC. Recommended for run-down condition, lack of pep, impaired vision, low vitality and general debility. The Female of Youth was only a Myth—but French Toniquettes are a happy reality for discouraged men and women. 40-Times package. Special strength for severe cases \$3. Send stamps cash or money order or pay on delivery. Please back. LA FRANCE, Inc., 32 Union Square, New York. Import Dept. P.C. 5.

**Valen's Bio-Dynamo-Prostatic Normalizer**—This imposingly-named appliance, sold by the quack George Starr White of Los Angeles, was merely a rectal dilator, sold under the claim that it would banish prostate troubles. White has agreed to discontinue advertising the product in newspapers, magazines, or by direct mail. "George Starr White—Quack" was the title of an article published in the Bureau of Investigation Department of THE JOURNAL, April 13, 1929. In it White's various excursions into the field of crude quackery were described in detail

**Lanzette Hair Remover**—Annette Lanzette, Inc., Chicago, which sells a synthetic pumice stone, has agreed to discontinue representing that the device permanently removes hair and to

discontinue the use of the word "rid" or any other words that imply that the product permanently removes hair when it has no such capacity

**Goldman Hair Dye**—The Monroe Chemical Company of St Paul, using the trade name Mary T Goldman, has agreed to discontinue repre-

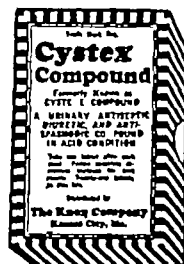
sending that Mary T Goldman is actively engaged in the business when the fact is she is dead, and attributing to Mary T Goldman statements and representations without indicating that such statements were made when Mary T Goldman was alive. The company also agreed to discontinue representing that the dye will "restore" the color of the hair, that the treatment takes only seven or eight minutes and requires only a few cents' worth of dye, and that the gray hair regains its youthful color overnight, when such are not the facts. The Goldman product is a hair dye of the silver-salt type. The product was discussed at length in *Hypocia* some years ago in the article "To Dye or Not to Dye"

**Aphrotone**—This alleged aphrodisiac was sold by one Charles N Mallory, who used the trade name L E Norton Products Company, Chattanooga. Mallory has agreed to discontinue the use of the trade name Aphrotone and to refrain from the use of any other word that might imply aphrodisiac properties, and to discontinue, also, representing that regardless of age or cause, sexual vigor will be restored, when the product does not have any such capacity

**Cystex**—The Knox Company of Kansas City, Mo., which has exploited an alleged cure for bladder trouble, backache, muscular pains, etc., under the name "Cystex," has agreed to discontinue making false and misleading claims for its nostrum. The files of the Bureau of Investigation show that the exploiters of Cystex have made a pretense of giving composition of their

## Bladder Weakness Makes You Feel Old

Getting Up Nights, backache, burning sensation, and other bladder conditions often hurt sleep, cause nervousness and lower vitality. If you suffer try Cystex Compound to allay your condition and quickly make you feel younger and stronger. Money back if one package doesn't do you more good than anything you ever tried. One week supply Cystex Compound Only.



product Cystex, it seems, comes in the form of two tablets, gray and brown. A few years ago the gray tablets were said to contain hexamethylenamine, powdered extracts of colchicum, calcium phosphate, and thyroid substance. Later the claims made for these tablets omitted all reference to thyroid substance. The brown tablets have been claimed to contain extracts of hydrangea, corn silk, buchu and triticum, with boric acid, potassium bicarbonate and atropine sulphate. No quantities of the ingredients seem to have been published

**Pile-Foe**—The Peoples Drug Stores of Washington, D C, venders of "Pile-Foe," an alleged cure for hemorrhoids, have agreed to discontinue representing that the preparation will

## PILES GONE IN 5 DAYS OR MONEY BACK

PILE FOE acts like magic for Blind, Bleeding, Protruding or Itching Piles. Relief comes instantly and the soothing, healing process goes on for 5 days—then your pile agony will be a thing of the past or money refunded \$1 postpaid. N W, Washington D C

stop pain instantly, regardless of the length of time a person has suffered, and that piles can be relieved or healed in five days or any other definite time

**Keller's Kapsules**—J T Keller, who trades as the Keller Capsule Company, Kansas City, Mo., has agreed to discontinue representing his preparation as a competent treatment for lumbago, rheumatism, neuritis, neuralgia, etc., without qualifying statements, and to discontinue representing that the preparation produces a prompt decrease in uric acid formation, when such is not the fact

**High Blood Pressure Cure**—H B Tonnies of Cincinnati did business under the trade name Landis Medicine Company and also advertised as C R Landis. He sold an alleged treatment for high blood pressure under the false claims that it was the prescription of a famous specialist and was a competent remedy for hypertension due to arteriosclerosis, nephritis, toxic goiter, etc. Tonnies has agreed to discontinue such claims

**Mak-Ova Stomach Tablets**—This was an alleged treatment for the relief of "stomach agony," pain, vomiting, stomach ulcers, chronic gastritis, acidosis and indigestion. It was put on the market by one C W Reynolds, trading as the Reynolds Chemical Company of Mound, Minn. Reynolds has agreed to discontinue advertising that his nostrum is a competent treatment for the conditions just mentioned, or that the formula was the result of years of experimentation by a specialist that cost thousands of dollars to perfect.

**Stomach Ulcer Remedy**—Normal H Tufty of Minneapolis, who traded as Morgan Miles Company and sold an alleged treatment for stomach ulcers, has agreed to discontinue advertising this nostrum.

**Lepso**—This quack epilepsy cure, is put on the market by R P Neubling of Milwaukee, doing business under the trade names R. Lepso and Lepso Company. Neubling has agreed to discontinue his claim that the stuff can be taken safely by children, when such is not the fact, and also to cease claiming that the product is a competent treatment for epilepsy without indicating the limits of its effectiveness. Lepso was the subject of an article published in the Bureau of Investigation Department of THE JOURNAL, June 12, 1915. The matter is reprinted in the pamphlet "Epilepsy Cures." The product, at the time it was examined in the A M A Chemical Laboratory, was found to contain the equivalent of 51 grains of potassium bromide to the dose.

**Radium Spa**—This was one of the numerous water jars sold under the claim that it will render water radioactive. It was put out by the American Radium Products Company of Los



Angeles. The Federal Trade Commission has ordered the company to cease and desist from misrepresenting the therapeutic value of the jar.

**Ten Herbs**—This nostrum is put out by the Ten Herbs Company of Chicago. The concern has agreed to discontinue claiming that the preparation is a remedy for rheumatism, neuritis, nervousness, etc. Readers of this department of THE JOURNAL may remember that in the issue of June 6, 1931 there was published a photographic reproduction of a post-

humous testimonial. This consisted of the facsimile of a Ten Herbs testimonial by a Mr J M Hocker that appeared in the Harrisburg (Pa) Patriot, March 5, 1931, together with the facsimile reproduction of Mr Hocker's death notice. Both testimonial and death notice appeared in the same issue of the Patriot.

**Varicose Veins and Eczema Cure**—F P John of Thiensville, Wis., has agreed to discontinue advertising his alleged treatment for varicose veins, old leg sores and eczema.

**Youth-Tint Hair Dye**—This preparation was marketed by L. Pierre Balligny and Balligny Products, Inc., of New York



City. The vendors have agreed to discontinue claiming that their product will restore the color of the hair or stating that it is anything other than a hair dye.

**Dermolax**—H G Levy, who traded as the Interstate Laboratories of Chicago, has agreed to discontinue the use of the firm name "Laboratories," as he neither owns nor operates any laboratories. He has also agreed to discontinue representing that psoriasis is caused by a germ localized in the tissues of the skin and that Dermolax Ointment and Soap would reach the seat of the trouble, when such is not the fact. He has also agreed to cease representing that Dermolax is a specific treatment for psoriasis. Information received by the Bureau of Investigation in 1929 from the National Better Business Bureau was to the effect that the Dermolax "treatment" consisted of a white product containing ammoniated mercury and a brown preparation that contained chrysarobin.

## Correspondence

### CLASSIFICATION OF HIGHER BACTERIA AND FUNGUS-LIKE STREPTOTHRICES

*To the Editor*—To at least one individual interested in diseases produced by the higher bacteria or molds and pathogenic yeastlike fungi, articles dealing with such subjects frequently add little to medical knowledge but do contribute to the confusion that already exists.

This is due, in some instances, to the failure of many authors to recognize and evaluate the ubiquity of such organisms. It is well recognized that the higher bacteria and fungi are widely distributed in nature and can be recovered from the sputum and stools of many normal individuals. Furthermore, by far the majority of species which have been isolated are nonpathogenic for laboratory animals and for man. Pathogenic strains of yeastlike fungi can be recovered from normal individuals (*Centralbl f Bakt*, part 1, 103 94, 1927, *Am J M Sc* 175 153 [Feb] 1928), and it seems likely that a decrease in bodily resistance, general (due to malnutrition or cachexia) or local (due to chronic pneumonitis or enteritis), is a prerequisite for infection, even with many of these pathogenic forms. In spite of these facts, medical literature abounds with reports of cases of disease in which the alleged primary etiologic factor is, in many instances, probably a harmless saprophyte and, in others, a secondary invader.

In other instances, confusion results either from the failure of the clinician to make use of or interpret properly botanic classification or from his ignorance of the literature. The recent article by Kovnat and Mezei on "Streptotrichosis" (*THE JOURNAL*, Dec 10 1932 p 2021) is a shining example. Here the reader is advised that, because of the incompleteness of botanic classification all diseases previously called pseudo-tuberculosis nocardiosis sporotrichosis pseudo-actinomycosis and actinomycosis (the last is not mentioned but the classic

paper by Wright on this subject is referred to in this regard) should be grouped under one disease entity, streptotrichosis, and it is implied that all of these conditions are caused by one and the same pleomorphic organism, which is characterized by the formation of brown granules in the exudate. Even to me—and I profess only a limited knowledge of clinical medicine and cryptogamic botany—a number of pertinent questions arise. Should one, for the reasons given and from the meager data supplied, dismiss the observations and opinions of such men as Vuillemin, Nocard, Wright, Drechsler, Lieske, Breed and Conn, Castellani or Henrici? Are not sporotrichosis and actinomycosis fairly definite and distinct clinical entities? If this world-wide pleomorphic organism is characterized by the presence of brownish granules, how can one account for the presence of granules of different color in the exudates of actinomycosis and Madura foot? On what data or authority do the authors base their statement that the organism can, in culture, give the "typical sporothrix picture" (the usual generic name for the etiologic agent of sporotrichosis is *Sporotrichum* and, so far as I am aware, has never been classified with the higher bacteria or threadlike fungi) or "produce ray-shaped, club-bearing colonies very similar to true actinomycosis"?

The case is most interesting and its report is certainly warranted. But why ignore the work of many well trained workers? It is acknowledged that the taxonomic classification of the higher bacteria and fungi is most confusing and inconsistent. Regardless of the botanic system, however, certain definitions for the different orders, families and genera are given which usually are sufficient to distinguish, one from the other, many of the higher organisms which Kovnat and Mezei propose to include under streptothrices.

Until due allowance is made for the omnipresence of molds and fungi and until the proper cooperation occurs between the clinician and the cryptogamist, medical literature will continue to contain articles which, in spite of their value as clinical observations, lead to confusion regarding the broader aspects of mold and fungus diseases in man.

ROBERT N NEE, M D, Boston

### HAND-CHRISTIAN SYNDROME

*To the Editor*—If an eponym is to be used at all in naming a disease—and there are good reasons for doing so when the eventual nomenclature and status of the disease are still in doubt—it is, I suppose, generally admitted that the name or names used should be those most importantly connected with its emergence as a disease entity. In the present instance, this most striking combination of membranous bony defects, exophthalmos and diabetes insipidus escaped the attention of the medical world until the report of H A Christian (*Contributions to Medical and Biological Research*, New York, Paul B Hoeber, Inc, vol 1, p 390, 1919) in the Osler memorial volumes of a case not coming to autopsy, attributed to dyspituitarism. The report by Arthur Schuller (*Fortschr a d Geb d Rontgenstrahlen* 23 12, 1915-1916) in 1915 of two cases, also without autopsy and also attributed to dyspituitarism, has occasioned this syndrome to be widely known, especially in Europe, as Schuller-Christian's disease. This completely ignores not only the report of an undoubted case in 1905 by T W Kay (*Pennsylvania M J* 9 520, 1905-1906) but also Alfred Hand's case, reported in 1893 (*Proc Philadelphia Path Soc* 16 282, 1891-1893). The latter not only has been accepted and is widely quoted as the first published case and as an undoubted example of the condition, with exophthalmos and diabetes insipidus but also came to autopsy, so that the softened yellow areas were observed well before the days of roentgenography. The hesitancy of Hand, a hospital intern at the time, to make a diagnosis is in the light of future knowledge of the

disease rather to his credit than otherwise. Omitting discussion of the relative claims of the earliest temporarily forgotten discovery compared to Christian's later one, which put the condition definitely "on the map," I can see no reason why Schüller's name should appear in this eponym—"Hand-Christian" would seem the eponym of choice, at least until a surely correct etiologically descriptive term is available. Dr Custer and I have already made this suggestion in Nelson's Loose Leaf System of Medicine, and it meets with the approval of Professor Pick, who has added so much to comprehension of the lipoid diseases. It is felt, however, that the wide publicity that THE JOURNAL affords would go further in rectifying the matter.

Since writing the foregoing I have seen the article by Chester and Kugel (*Arch Path* 14 595 [Nov] 1932), in which they use among others the terms "lipoidgranulomatosis" and "Hand's disease." While the latter term has the merit of brevity, it might cause confusion through omission of the better known names, and the former is not only cumbersome but assumes an etiology that is by no means generally accepted.

E B KRUMBHAR, M D, Philadelphia

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

#### SCIATICA

*To the Editor*—A man, aged 40, while carrying a heavy piece of beef on his shoulder slipped. A pain developed low down in his back. He kept on working for a few days, thinking that the pain would go away. He then went to the company doctor, who treated him for some time, and he again went back to work, but on account of pain in his back, which extended down his leg, he had to stop work. In fact, the pain was so bad that he had to go to bed and required sedatives for some time. He still has pain and is unable to work. The company doctor has diagnosed his trouble as sciatica, and the question now is: Is this trouble due to the accident and if it is will he be able to get compensation? What is the opinion of leading men as to a traumatic cause for sciatica?

H W FROELICH, M D, Minneapolis

ANSWER—Ever since Cotugno described sciatica, this term has been loosely applied to any condition characterized by pain in the lower part of the back and lower limbs, regardless of the underlying cause and of the other clinical manifestations associated with the pain. One finds the term "sciatica" applied to designate such conditions as sciatic neuralgia, sciatic neuritis, sciatic radiculitis, meralgia paraesthetica, lumbago, myalgia and myositis, as if all these conditions were one and the same clinical entity. As pain in the lower part of the back and in one or both lower limbs is in the majority of cases merely a symptom complex that may be present in various and different clinical entities, Grossman and Keschner suggest that this symptom complex be designated as the "sciatic syndrome." These writers state that the lack of pathologic data has caused great confusion as to what clinical types should be included under the designation of the "sciatic syndrome." Most orthopedists and many neurologists use the term "sciatica" to designate any condition characterized by pain in the distribution of the sciatic nerve. The terms sciatic neuralgia, idiopathic sciatica, sciatic neuritis, myalgia and others are constantly employed without due regard to the differences in the clinical manifestations of these various conditions.

Smith-Petersen says that sciatica is a misused term. It is not sciatica—it is first and second sacral pain. The fourth and fifth lumbar are not involved in this radiation pain. Pain is not referred to the anterior aspect of the leg and dorsum of the foot. Only two fifths of the sciatic nerve is involved. One who wishes to use the term sciatica should say "sciatica with first and second sacral involvement."

The predisposing causes of the sciatic syndrome are congenital anomalies, postural defects and hereditary predisposition. Foci of infection, and metabolic, glandular and circulatory disturbances also are important predisposing factors. The determining or exciting causes are infection, exposure to extremes of heat, cold, moisture and dryness, fatigue and trauma. The



last includes direct trauma, trauma by leverage, severe single trauma or repeated minimal trauma

Sicard believes that many "neuralgias of the trunk" are due to compression or strain on perves or nerve roots at the points where they traverse bony canals. He calls the condition "neurodocitis."

The intervertebral foramen constitutes a critical region or, as Sicard has named it, "carrefour de la douleur", i. e., the crossroads of neuralgia. Any condition that modifies in the slightest degree the contents or the container at once induces a painful reaction, which is referred distally to the sciatic nerve.

Most cases of the sciatic syndrome are due to arthritis of the lumbar spine of the lumbosacral or sacro-iliac joints.

The fact that the patient was able to carry on his strenuous occupation, which necessitated carrying heavy pieces of beef, indicates that he was free from any serious arthritis before the shipping accident. Possibly there was some circulating toxemia originating in a focus in any one of the following tissues, namely, the teeth, throat, sinuses, gastro-intestinal tract, genito-urinary tract and lymphatic system. If it was simply a strain or a sprain one would anticipate recovery in from ten to twenty-one days. Trauma in the presence of a circulating toxin, whether chemical, metabolic or bacterial, predisposes to chronicity. The correspondent is referred to *Queries and Minor Notes, THE JOURNAL*, Oct 8, 1932, page 1282, for discussion of traumatic arthritis.

#### SKIN SENSITIVITY AFTER INSULIN—COMMERCIAL DEPILOTORIES

*To the Editor*—I have a diabetic woman under my care. She has been under control for the past two years through a regulated diet and insulin. The blood sugar is normal and there are no clinical symptoms of diabetes. For the past two years she has noticed that her skin seems to be more sensitive than previously. For instance small burns and abrasions which would have been hardly noticeable before she became diabetic now cause severe blisters which are slow in healing. Any mild irritant will cause the skin to become red and tender. The patient has a moderate hypertrichosis on the face and is anxious to use some depilatory cream to remove this hair. She has read about the unpleasant results of some of the depilatory creams (such as Koremlu) and knowing how sensitive her skin is she is afraid to use them. Please advise me as to whether the patient could use the ordinary types of depilatory creams that are sold on the market without danger of irritating the skin too severely. I refer to such creams as Neet and Zip. Please omit name.

M D Ohio

*ANSWER*—1 There seem to be two possibilities. Either the patient still has the irritable skin of diabetes or there may be some relation to insulin. Despite efficient treatment, the diabetic skin may be still sensitive to slight injury, but from the notes there is no way of deciding whether it is the diabetes or the insulin that gives the patient the reaction described.

2 What the patient calls the "ordinary type of depilatory creams" are practically all of them, combinations of alkaline sulphide. These chemicals have the power of dissolving horn-like substances such as hair. As the outer layer of the skin has the same general structure as the hair, there is always the possibility that such depilatories may harm the skin and even some of the deeper tissues. Such creams, of course, do not permanently remove the hair and have to be reapplied as the hairs grow.

#### WANDERING MYOMATA AND FIBROIDS

*To the Editor*—What is the accepted theory regarding the mechanism of the migration of fibroids along the uterine wall during pregnancy (migration of the Germans)? Dr Sellheim made some remarks on this subject in volume 94 of the *Monatsschrift für Geburtshilfe und Gynäkologie*. I could not find anything written on this question in American or German literature. If there is anything that I could read up on this question kindly give me the titles of the articles. Please omit name.

M D New York

*ANSWER*—There are few references to "wandering" myomas in the American literature. DeLee describes briefly the displacements of the tumors during pregnancy. Boerner described the movement as it occurs at right angles to the uterine wall. Normally and during menstruation fibroids have a tendency to change their positions. The uterine contractions have a good deal to do with this but the primary location has as much influence. The uterine contractions will force a myoma of the fundus either inward or outward in the direction of least resistance more often outward toward the peritoneal cavity. The contractions may also force a fibroid downward along the uterine wall toward the internal os if the primary location is such that this is the direction of least resistance or, indeed, in any direction following the same laws. In each case, the displacement is the lamellar contraction of the particular muscle. In the uterus the lamellation of the muscular bundles

is more distinct than in others, which can be seen at cesarean sections and in the dissections of Helie, Bayer and others. Thus, an intramural fibroid may be forced out of the wall entirely, contract adhesions to the omentum or bowel, and, its pedicle strangulated, become a parasite on another organ, or it may be pressed first into the cavity of the uterus and then delivered through the cervix.

During pregnancy, fibroids show astonishing mobility, which often confuses them with ovarian cysts, they may rise out of the pelvis, with the development of the fundus, or sink lower, with the enlargement of the cervix, depending on their point of origin. They may, even if subperitoneal, go inside the uterus and become broadly pedunculated, they may be forced by the uterine contractions through their peritoneal covering, with intraperitoneal hemorrhage. If anchored in the base of the broad ligament or under the bladder, they may force the uterus to develop in abnormal directions, producing fantastic uterine formations. The mobility of the fibroids is due to the softening and lamellation of the uterus and to the movability of the whole uterus. Myomas of the fundus near the insertions of the round ligaments, may be twisted far in either direction.

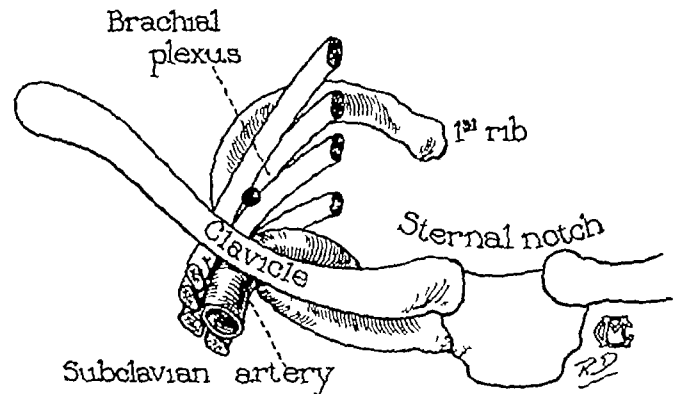
#### LOCAL ANESTHESIA OF BRACHIAL PLEXUS

*To the Editor*—Would you please give me an outline of the technique of brachial plexus anesthesia for local anesthetic work on the arm? I have run across several mentions of it but cannot find the details. Please omit name.

M D Iowa

*ANSWER*—Brachial plexus block is described in detail in Labat's "Regional Anesthesia" (Philadelphia, W B Saunders Company, 1928) and in Braun's "Local Anesthesia" (Philadelphia, Lea & Febiger, 1924).

There are four routes for blocking the brachial plexus (1) paravertebral (Kappis), (2) axillary (Hirschel), (3) infra-



Brachial plexus block. The solid black dot indicates the point of injection. (After Lundy, J S. *Proc Staff Meet Mayo Clinic* 4: 77 [March 6] 1929.)

clavicular (Louis Bazy), and (4) supraclavicular (Kulenkampff). It is the last-mentioned method that is most commonly employed. This is accomplished with the patient lying on his back with his head turned away from the side to be injected and his hand placed against the lateral surface of the thigh. The shoulder is depressed to bring the clavicle down away from the chin as far as possible. A wheal is raised about a finger's breadth above the midpoint on the clavicle and is usually a finger's breadth lateral to the subclavian artery. The subclavian artery is palpated and a needle is inserted so as to avoid the artery at the point at which it is being palpated, the needle is not inserted deeper than the first rib. Usually the patient complains of paresthesia in some part of the hand or arm if the point of the needle strikes any part of the plexus. It should be explained to the patient prior to the injection what to expect, and he should be told to indicate immediately when paresthesia occurs. The needle is then held in position, and from 10 to 20 cc of 2 per cent solution of procaine hydrochloride is injected slowly. At first, aspiration should be done to see whether blood can be obtained. If it can be obtained, it will indicate that the point of the needle is in a blood vessel. If paresthesia cannot be produced the solution of procaine is injected in the approximate situation of the plexus and the spot is massaged for about two minutes. The anesthesia should appear very quickly, in five minutes if the needle is brought directly against the brachial plexus but its appearance may be delayed as long as twenty or thirty minutes if no paresthesia is obtained. The accompanying illustration gives the important relationships.



## AZOOSPERMIA

*To the Editor*—A man, aged 30, was operated on eight years ago for undescended testicles. The left testicle was completely atrophied and the right, which was brought down in the scrotum, was the size of a hazelnut but normal in consistency. Since then it has not changed in size. The patient is normal in every respect, physically and mentally, except for aspermia on repeated examinations. Orchic substance has been tried without results. The patient is anxious to have his wife pregnant. Is there any treatment that you can advise for his apparent sterile condition? Please omit name.

M D, New York

**ANSWER**—In all cases of azoospermia (which is undoubtedly the condition present and not aspermia), the first thing to determine is whether a testicle is present in which the spermatogenic function is absent or whether the azoospermia is due to an obstruction in the epididymis or vas. This differential diagnosis is important, as the treatment is different in the two cases. Of course, the two conditions may coexist. The diagnosis is made by inserting a needle, under absolutely aseptic conditions, into the testicle and epididymis and aspirating and examining the aspirated fluid thus obtained for spermatozoa. No anesthetic is necessary, although the pain is quite sharp for a second, but local anesthesia is of no use, as the pain is distinctly testicular in character and is often felt in the inguinal region rather than at the site of the aspiration. If spermatozoa are found in the aspirated fluid, even though immotile, one can conclude that the trouble is an occluded epididymis or vas and the operation of epididymovasostomy would be justifiable, the patient being informed, however, that, though the operation cannot possibly harm him, it is successful only in less than 50 per cent of the cases. If no spermatozoa are found in the aspirated fluid, no such operation would be justifiable, as the testicle itself does not produce spermatozoa. In this case one may advise the experimental administration of tablets of the anterior lobe of the pituitary as the activator of the testicle, which at times restores the spermatogenic function of that organ. The tablets should be given in large doses, as much as 80 grains (5 Gm.) a day by mouth. They should be continued for a period of six months, with monthly condom examinations. If spermatozoa are now found in the condom specimen, the prognosis is encouraging and the tablets may be continued until the specimen is normal. If, however, after six months no spermatozoa are found in the condom, another aspiration may be done, for there may also be an occlusion of the epididymis or vas. If no spermatozoa are now found in the aspirated fluid, no further treatment is justifiable. If, however, spermatozoa are now found in the aspirated fluid, though absent in the condom specimen, epididymovasostomy may be recommended.

## POSSIBLE METOL POISONING

*To the Editor*—A photographer aged 43, was developing pictures, using metol. When he had finished, his hand was stained a dark brown. After washing it in sodium hyposulphite solution he found that burning and cramping occurred for several minutes. For the next five days he felt drowsy and had a dull headache. The urine was a dark brown and the bowels acted but little, with infrequent watery actions. On the night of the fifth day all the chest muscles began to cramp. He found that he could obtain relief by sitting up in bed, but the least movement caused the pains to come on and he could not lie down at all. In another twenty-four hours the pains were so severe that breathing was difficult, and for relief a hypodermic of morphine, 0.03 Gm., was required. The muscles of the right side and the chest could be felt in knots. A dry hacking cough persisted throughout the attack. This is the eleventh day. No cramps have occurred for three days but the muscles are tender. At times the joints have pained a great deal. No fever has been noted at any time. The urine is normal except for being highly colored and having a specific gravity of 1.008. Do you think this is metol poisoning? I have no literature on the subject. What treatment do you suggest?

M D, Mississippi

**ANSWER**—It is presumable that this photographer has repeatedly used metol in developing negatives, at least, many hundreds of photographers have used this substance without the development of systemic disease. Dermatitis after contact with metol (mono-methyl-*p*-amido-*m*-cresol sulphate), however, is well known. Sensitization to metol, apparently, is established. In the present instance it appears that no dermatitis other than burning for several minutes existed. Little is known as to what determines absorbability through the skin. Water does not pass the skin barrier to any considerable extent, but water-fluid benzene apparently does. Inorganic lead compounds are not known to enter the body through the skin except in traces, but the organic tetra-ethyl lead may so enter. Phenols and cresols are known to pass through the skin, and metol is a cresol compound.

The detection of cresolic bodies in the urine during the acute stage probably would have permitted a positive diagnosis.

In *Queries and Minor Notes* (THE JOURNAL, Jan. 17, 1931, p. 212) the possibility of internal disease from metol was specu-

fied. From such information as is now available, the stand must be taken that the condition described is not proved to have resulted from the action of metol. Proof may be expected if this photographer repeats his exposure with ensuing similar injury.

The manufacturers of developers have expressed the opinion that the alkali in the developer is the source of the dermatitis. The use of a weak acid bath for the hands, at intervals during developing, is recommended. Amidol, a nonalkaline developer, is favored over metol. For the acid bath mentioned, 1 per cent hydrochloric acid is recommended.

## ANTIHISTAMINE THERAPY AND TREATMENT OF ASTHMA

*To the Editor*—What are the procedures in antihistamine therapy? As the cortex of the suprarenal gland, according to Banting and Cairns, seems to act as a marked detoxicating agent for histamine, would it be of any value to use a cortical extract such as Hartman's in a case of severe asthma? The individual I have in mind reacts to several pollens by the skin test, namely, dandelion, rose, dahlias, aster, sunflower, apple and maple, and the bacterial proteins of the pneumococci and staphylococci and streptococci. She has been tested for practically all the other pollens with negative results. The attacks appear to be seasonal, beginning around June 1 and lasting into September. Please omit name.

M D, New York.

**ANSWER**—The fact that the asthma is seasonal, lasting from about June 1 into September, strongly suggests that the symptoms are due to inhalation first of grass pollen and then of ragweed pollen. The hay fever season, which begins about the end of May and lasts until about August 1, is due to grass pollen, e. g., June grass, timothy, red top and orchard grass (these are the main ones in the Northern and Central states, others exist in other sections). About the middle of August and lasting for about six weeks there comes out the ragweed group, especially short and giant ragweed, and some burweed marsh elder. An important point is that the pollen of these weeds is light and is carried by the wind for many miles. Pollen of the flowers mentioned in the query, e. g., dandelion, rose, dahlia, aster and sunflower, are heavier and are carried by insects and hence are of no practical importance in causing hay fever or asthma. It is readily seen, therefore, that the pollen of these grasses and weeds should be considered the causative agents in this case, unless proved otherwise. They need not cause hay fever symptoms, it is not infrequent to find seasonal asthma due to pollens with no trace or very little, at most, of the sneezing, rhinitis and conjunctivitis that characterize hay fever.

The procedure, therefore, should be skin tests with the pollens or pollen extracts mentioned. If these are positive the diagnosis should be accepted without further procedure because of the seasonal symptoms. If the cutaneous tests are negative, intracutaneous tests with a dilution of 1:1,000 pollen extracts should be tried, along with a control test, e. g., physiologic solution of sodium chloride. About 0.02 cc. is necessary. If these prove negative, the conjunctival test should be tried. A tiny amount of the raw pollen on the end of a toothpick is placed on the everted lower eyelid, if the patient is sensitive, the sclera of the eye will become reddened within a few minutes. Ragweed can be tried on one eyelid and one of the grass pollens, such as timothy, on the other. If the conjunctival test is also negative, one can be sure that the pollen is not responsible for symptoms, as this test is the most reliable and delicate procedure available.

If the patient is sensitive to pollen, she should receive desensitization treatment with the appropriate pollen extracts, in this case she probably needs both grass and ragweed extracts. If the pollen tests prove negative, the patient should be tested with as complete a line of proteins as possible. Special attention should be given to tests for orris root (face powder) and to foods eaten chiefly in the summer, such as corn and cantaloup.

The status of histamine and antihistamine therapy is by no means settled. There is no doubt that histamine acts in many ways like an allergen, such as egg white. It would seem, however, that the active principle in allergen, while similar to histamine, is not identical. B. S. Kline, M. B. Cohen and J. A. Rudolph, in a paper read before the Association for the Study of Allergy, May 9, on histologic changes in allergic and other wheals, showed that there is a great deal of difference between the histologic appearance of wheals produced by injecting histamine and that from ragweed pollen extract. Furthermore, asthmatic patients have been given increasing histamine injections with a view toward desensitization. The efficacy of such a measure is doubtful. Ramirez and St. George (M. J.

& Record 119 71 [Jan 16] 1924) treated ten asthmatic patients with subcutaneous injections of histamine. Beginning with 1 mmim of a solution containing 0.5 mg to the cubic centimeter, they could increase the dose up to 6 mmims of a solution containing 2 mg to the cubic centimeter, but they found that doses larger than this would cause headache, flushing of the face, weakness and urticaria, and it did not appear possible to increase them. Reference to the use of an extract of the cortex of the suprarenal gland in cases of severe asthma could not be found. Such an extract might help, but only in a non-specific manner.

#### OPERATION FOR LYMPHEDEMA

To the Editor—I read with great interest a recent article in THE JOURNAL telling of new operations for increasing blood flow. Are there any new procedures or operations to increase lymph flow? A woman aged 60 began six months ago to have a thickening and edema of the skin of the suprapubic region and labia. The process has gradually extended to the legs which at present are moderately swollen and painful and show marked lymphedema, but no leatherness of the skin. The skin of the suprapubic region is hard and leathery, like a real elephant tiasis. There have been no signs of acute lymphangitis and no fever. Suggestions as to treatment to relieve her from her invalid condition would be greatly appreciated. Please omit name.

M D Michigan

ANSWER.—The most satisfactory operation for lymphedema of the extremities is that of Kondoleon (Sistrunk, W E Further Experiences with the Kondoleon Operation for Elephantiasis, THE JOURNAL, Sept. 7, 1918, p 800). This promotes anastomosis between the superficial and deep lymphatics. It is of no value when both the superficial and the deep sets of lymphatics are blocked.

The operation of Handley is an effort to create new channels along the subcutaneous tissues by placing silk threads through these tissues. Its results have not roused much enthusiasm. The failure of most operations is due to the fact that obstruction is usually caused by scar tissue or a recurrence of carcinoma.

It may be difficult to differentiate a pure lymphedema from a swelling due to a deep thrombophlebitis of an extremity although the history may help. The former is rare in this country. It is more probable that in the present case the swelling is associated with a deep pelvic vein thrombus or a cirrhosis of the liver or, what is more frequent, it is of cardio-renal origin.

An effort to diagnose and treat any systemic condition should be made, but because of the extent of the swelling and the age of the patient it is doubtful whether any surgical procedure should be considered.

If cardio-renal disease exists recent medical works should be consulted as digitalis, the diuretics and proper diet may be of value.

#### GAIN IN WEIGHT DURING PREGNANCY

To the Editor—What is the normal maternal gain in weight, month by month for the average normal pregnancy?

DAVID M BLUM M D Des Moines Iowa

ANSWER.—As far as is known there have been no reports of studies concerning the gain in weight each month throughout pregnancy. However there have been numerous investigations dealing with the acquisition of weight during the latter half of gestation. Zangemeister (Ztschr f Geburtsh u Gynäk 81 491 [May] 1919) for example found that the weight of pregnant women increases regularly from the twenty-seventh week to within a few days of full term. He observed that the average gain during each of these weeks was about 405 Gm or about 1620 Gm each lunar month. Zangemeister found that the greatest weight was recorded for each patient about three days before delivery. During the last few days of pregnancy this author observed a distinct decrease in weight in almost all the women hence he believed this fact could be used to predict the onset of labor. However not all observers have been able to verify Zangemeister's last contention. Lorenzen (Ztschr f Geburtsh u Gynäk 84 426 [1921]) found a daily increase of 60 Gm after the thirty first week, that is about 192 Gm each lunar month.

Gäner (Monatsschr f Geburtsh u Gynäk 19 1 [1862]) found that during each of the last three months of gestation there was an average gain which varied between 1540 and 2400 Gm.

Kerrin (Am J Obst & Gyna 11 473 [April] 1926) found that the average gain in weight from the end of the twelfth to the end of the twenty-fourth week was 8½ pounds (38 Kg). The average gain from the twenty-fourth week to the end of gestation was 7½ pounds (34 Kg).

It must be remembered that the gain in weight during pregnancy depends on many factors. It is slightly greater in multip-

aras, in obese women and in older women. The size of the baby and the placenta and the amount of liquor amni also play a small part. A great increase in weight is distinctly abnormal.

#### PILONIDAL CYSTS

To the Editor—Will you please tell why pilonidal cysts are most frequently found over the lumbosacral region? What reference books can be consulted for more detailed information? Please omit name.

M D, Connecticut.

ANSWER.—The pilonidal cyst or sinus is a congenital anomaly. It usually consists of one or more orifices in the skin from which a ductlike passage leads into the tissues over the posterior surface of the lower sacral vertebrae. The sinus is lined with stratified modified squamous epithelium possessing hair follicles and sweat glands. Formerly this was thought to be a coccygeal dermoid (Beal, E J, in Warbasse Surgical Treatment, Philadelphia, W B Saunders Company 1 787, 1920, quoted by Stone) or a vestigial remnant of the posterior end of the neural axis, in which for a time at the point of connection with the skin a process of epithelial tubules persists (Hermann and Toureux, in von Bergmann A System of Practical Surgery, Philadelphia, Lea Brothers & Co 3 589, 1904, quoted by Stone).

Recently, the similarity of the structures to the preen or oil gland occurring in a great many but not all species of birds has led to the belief that this latent potentiality may, in man, develop as a pilonidal sinus (Stone, H B Ann Surg 94 317 [Aug] 1931). Stone finds no other anomaly of this type and compares the pilonidal sinus to the special downgrowth of epithelium originating from the true skin, such as occurs in the development of the breast and the external auditory meatus.

The preen gland in the bird is a structure formed of several ducts up to six, opening into a cavity into which several tubules converge. The function of this gland is thought by many to be for oiling the feathers of birds, but in other animals it may be a scent gland.

Paris (Arch de Zool exper et gen 53 130, 1913-1914) found that not only birds but all amniotes as well—reptiles, avians and mammals—present species that have similar or analogous structures. In the majority of cases the glands are located about the anal or caudal region. Paris considers them similar to sebaceous glands.

#### TRANSMISSION OF SYPHILIS BY INJECTED BLOOD

To the Editor—If several cubic centimeters of whole blood from a person with syphilis should be given subcutaneously, what is the probability of the disease developing in the recipient? Would a chancre develop at the point of injection? If not, what would be the earliest symptoms and how soon could they develop? How soon would the Wassermann reaction become positive? Would the disease so contracted be likely to be transmitted by intercourse or by kissing? Would the longer the time the donor had had the disease decrease the probability of infection? Please omit name.

M D, Maine

ANSWER.—Whether or not syphilis would be transmitted by several cubic centimeters of whole blood subcutaneously injected would, of course, depend on the presence of Spirochaeta pallida in the blood stream of the donor or in some local lesion through which the needle might pass, though the latter possibility is, of course, most remote. Spirochetemia is dependent primarily on the age of the infection, being marked during the primary and secondary stages of the disease, say, for example, within the first three months, and then subsiding to the point at which it is probably only an occasional and perhaps a rare phenomenon. That spirochetemia is periodic even in latent and late syphilis has been demonstrated by several investigations involving transmission of the disease to the rabbit.

Syphilis transmitted by needle prick or directly to the blood stream by any method of transfusion does not give rise, in a certain proportion of cases, to a chancre, but is grouped under the separate category of syphilis d'emblee. A chancre might develop at the site of inoculation, but the probabilities are equally good that it would not.

Syphilis transmitted by blood transfusion has been shown to run a course similar to or perhaps slightly more severe than that of the ordinary cutaneously inoculated infection. Secondaries appear from four weeks to two months after the blood stream inoculation and are not essentially different in many cases from those appearing in the ordinary course of acquired syphilis.

All rules concerning the transmission of the disease by intercourse or by kissing are identical in blood stream infections and cutaneously or mucosally inoculated infections except for the absence of the infectious chancre.

Council on Medical Education  
and Hospitals

COMING EXAMINATIONS

ALASKA Juneau, March 14 Sec., Dr Harry C DeVighne, Juneau  
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS Milwaukee,  
June 12 Sec., Dr William H Wilder, 122 S Michigan Blvd, Chicago  
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The written  
examination will be given in cities of the United States and Canada  
where there is a Diplomate who may be empowered to conduct the  
examination, April 1 The general oral, clinical and pathological exami-  
nation will be held in Milwaukee, June 13 Sec., Dr Paul Titus,  
1015 Highland Bldg, Pittsburgh  
AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee, June 12 Sec.,  
Dr W P Wherry, 1500 Medical Arts Bldg, Omaha  
CALIFORNIA Los Angeles, Feb 27 to March 2 Sec., Dr Charles B  
Pinkham 420 State Office Bldg, Sacramento  
CONNECTICUT Basic Science New Haven, Feb 11 Prerequisite to  
license examination Address, State Board of Healing Arts 1895 Yale  
Station, New Haven Regular Hartford, March 14-15 Endorsement  
Hartford, March 28 Sec Dr Thomas P Murdock 147 W Main St,  
Meriden Homoeopathic New Haven, March 14 Sec, Dr Edwin C M  
Hall, 82 Grand Ave, New Haven  
MAINE Portland, March 14-15 Sec, Dr Adam P Leighton, Jr,  
192 State St, Portland  
MASSACHUSETTS Boston, March 14-16 Sec, Dr Stephen Rushmore,  
144 State House, Boston  
NATIONAL BOARD OF MEDICAL EXAMINERS The examination will be  
held in centers where there are five or more candidates, Feb 13-15  
Ex Sec, Mr Everett S Elwood, 225 S 15th St, Philadelphia  
NEVADA Reciprocity Carson City, Feb 6 Sec, Dr Edward E.  
Hamer, Carson City  
NEW HAMPSHIRE Concord, March 16-17 Sec, Dr Charles Duncan,  
Concord  
OKLAHOMA Oklahoma City, March 14-15 Sec, Dr J M Byrum,  
Shawnee  
PUERTO RICO San Juan, March 7 Sec., Dr O Costa Mandry,  
Box 536, San Juan  
VERMONT Burlington, Feb 15-17 Sec, Dr W Scott Nay, Underhill  
WYOMING Cheyenne, Feb 6 Sec., Dr W H Hassel, Capitol Bldg,  
Cheyenne.

Oklahoma September Report

Dr J M Byrum, secretary, Oklahoma Board of Medical  
Examiners, reports the written examination held at Oklahoma  
City, Sept 13-14, 1932 The examination covered 12 subjects  
and included 120 questions An average of 75 per cent was  
required to pass Eight candidates were examined, all of  
whom passed Eleven candidates were licensed by reciprocity  
with other states, 3 by endorsement 2 were reregistered, and  
2 duplicate licenses were issued The following colleges were  
represented

College	PASSED	Year Grad	Per Cent
University of Arkansas School of Medicine	(1931) 85	(1932)	86
St Louis University School of Medicine		(1930)	90
University of Oklahoma School of Medicine		(1932)	90
University of Oregon Medical School		(1932)	91
University of Tennessee College of Medicine		(1932)	81
Baylor University College of Medicine		(1932)	89
University of Texas School of Medicine		(1932)	90
College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Arkansas School of Medicine		(1929)	Arkansas
University of Illinois College of Medicine	(1928)	(1930)	Missouri
State University of Iowa College of Medicine		(1930)	Iowa
Kentucky School of Medicine		(1907)	Kentucky
Washington University School of Medicine		(1928)	Missouri
John A Creighton Medical College		(1917)	Nebraska
University of Pennsylvania School of Medicine		(1930)	Illinois
Meharry Medical College		(1928)	Michigan
University of Tennessee College of Medicine		(1930)	Tennessee
Undergraduate			Kansas
College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Northwestern University Medical School		(1932) 2	N B M Ex
Rush Medical College		(1929)	N B M Ex

Michigan October Report

Dr Nelson McLaughlin, secretary, Michigan Board of Regis-  
tration in Medicine, reports the written examination held in  
Lansing, Oct 11-13, 1932 The examination covered 14 sub-  
jects and included 100 questions An average of 75 per cent  
was required to pass Sixteen candidates were examined all  
of whom passed One physician was licensed by endorsement  
The following colleges were represented

College	PASSED *	Year Grad	Per Cent
Loyola University School of Medicine		(1932) 75 6 †	80 7 †
Northwestern University Medical School		(1931)	83 5,
(1932) 82 9 † 84 2 84 9 †			
Indiana University School of Medicine		(1932)	81 1

Johns Hopkins University School of Medicine	(1931)	83 6
University of Michigan Medical School	(1931) 82 3	83 2,
(1932) 76 7		
Hahnemann Medical Coll and Hosp of Philadelphia	(1932)	81 9
Queen's University Faculty of Medicine	(1932)	79 9
University of Toronto Faculty of Medicine	(1913)	84 4
(1932) 81 6, 84 8		
College	LICENSED BY	Year
Baltimore Medical College	ENDORSEMENT	Grad of
		(1905) Maryland
* The licenses of these applicants have not as yet been issued		
† These applicants have completed their medical course and will receive an M D degree on completion of an internship		
‡ These applicants have received an M B degree and will receive an M D degree on completion of an internship		

Book Notices

Diagnosis and Treatment of Diseases of the Thyroid Gland By George  
Crile and Associates Edited by Amy F Rowland Cloth Price, \$6 50  
Pp 508, with 164 illustrations Philadelphia & London W B  
Saunders Company, 1932

This is an interesting and readable discussion of the principal  
clinical features of diseases of the thyroid gland It is pro-  
fusely illustrated by charts and photographs and contains  
numerous case reports As stated in the preface, the work is  
not a formal treatise on the thyroid gland and does not attempt  
either by reports of scientific studies or by exact statistical com-  
pilations to establish facts concerning thyroid disease or its  
treatment Apparently chapters have been assigned to those in  
the Cleveland Clinic who are especially concerned in the sub-  
ject at hand Of the thirty-nine chapters, about half are  
written by Dr Crile himself, and in some of them he has  
taken the opportunity to present his theories concerning the  
mechanism of hyperthyroidism and the relation of the thyroid  
to other endocrine glands and to infections and emotional strain  
These writings represent the philosophical attitude of thought  
of the writer, which has always been stimulating The chapters  
dealing with technical surgical procedures no doubt will prove  
of practical interest to those charged with the conduction of  
surgical clinics everywhere, since they contain detailed descrip-  
tions of technical procedures as employed at the Cleveland  
Clinic The chapter on carbohydrate metabolism in hyper-  
thyroidism, by Dr Henry J Johns, is particularly well done  
and is authoritative The relationship of glycosuria, diabetes  
and hyperthyroidism is well stated and illustrated by numerous  
tables, charts and photographs and by the abstracts of fourteen  
case reports Throughout the work, selected references which  
are believed to be of practical interest but which do not attempt  
to cover the immense literature on this subject are listed and  
should prove useful The final chapter, on the end-results of  
operations for hyperthyroidism, states the surgical view favor-  
ing the surgical approach Save for a vocal minority, this view  
is generally accepted by the American profession, it would  
seem, as a result of trial and error and not because of adequate,  
detailed and specific statistical support to be found in the  
follow-up study of thyroid clinics The truth appears to be  
that the surgical control of hyperthyroidism is accepted by the  
medical profession generally because it has found it the best  
means at hand to control a desperate situation It is not a  
true cure because it does not strike at the cause of the disease  
process If and when the true etiology of hyperthyroidism is  
demonstrated and a true cure based on etiology is forthcoming,  
this will be immediately accepted

The Psychological Effects of Menstruation By Mary Chadwick  
Nervous and Mental Disease Monograph Series, No 56 Boards Price  
\$2 Pp 70 Washington, D C Nervous & Mental Disease Publishing  
Company, 1932

The author begins with a concise historical review of the  
fears, tabus and superstitions that always have surrounded  
menstruation Visualizing the different expressions of these  
fears in different cultural levels, she ventures an interesting  
hypothesis on a possible connection between the psychic effect  
of menstruation and the medieval belief in witches Certainly  
there are striking similarities between the psychic disturbances  
of menstruating women and the qualities attributed to witches  
as well as between the evil influences attributed to both Yet  
methodological reasoning has shown that conclusions built only  
on the basis of analogies with facts of individual psychology  
may mislead thoroughly in the interpretation of sociological

facts To make out of this stimulating idea more than an analogy, to make it a statement of scientific value, it would be necessary to know in great detail the cultural and social background of the time concerned Only from the exact knowledge of the historical background could one possibly understand why menstrual difficulties in that particular time resulted in the belief in witchcraft The second and third parts of the book stand on the more secure basis of observation and experience with patients In enumerating the conflicts leading to menstrual disorders, the author lays particular stress on the conflict with the mother and on the influence of repressed homosexual tendencies—a statement that is in agreement with the experiences of others This clinical portion of the book would be still better if there were a clearer distinction between observed facts and certain psychoanalytic hypotheses, such as that "the separation of mother and child at birth by cutting will be one of the earliest causes for feelings of hostility to the mother" What is totally lacking and what seems indispensable for the understanding of the whole phenomenon is the evaluation of the attitude of men toward menstruation The illuminating contributions of Daly dealing with the psychology of the male attitude toward menstruation are not considered

*Le rachitisme et la tétanie* Par le Dr Edmond Lesné médecin de l'Hôpital Trousseau et le Dr Lucien de Gennes médecin des Hôpitaux Monographies de pédiatrie et de puériculture Paper Price 30 francs Pp 175 with 31 plates Paris Gauthier Villars & Cie 1932.

The authors of this brief but concise exposition have succeeded in producing unusually clear pictures of the related rickets and tetany without trifling Dividing the title, they have elucidated each subject in systematic subdivisions from historical aspects and theoretical considerations through clinical forms, humoral characteristics and experimental data to treatment. The section on rickets does not fail to give the visceral manifestations their deserved emphasis and compels the reader to appreciate the brilliant accomplishments of the last few decades in the realms of prophylaxis and more or less specific therapy In regard to the latter subject, the present medical generation is probably so close to the isolation of vitamins and the influence of ultraviolet rays that it will naturally blunder into the assumption that all rickets is a result of avitaminosis Medical thought may yet return to the endocrine glands for an explanation of those cases of rickets despite vitamin administration which every clinician has encountered. The section on tetany, comprising fifty pages, is satisfying to the reader who unconsciously judges the description according to his own pet views He finds them simply expressed and properly evaluated Many handbooks are labors of the library This little book offers abundant evidence that the authors have been actively contributing experimental data to the subjects and are thoroughly versed in their practical aspects The roentgenograms and histologic illustrations are well chosen.

*Modern Physical Therapy Technique* By Charles L. Ireland M.D. Cloth. Price \$7 Pp 412 with 225 illustrations Columbus Ohio The Author 1932

Charles L. Ireland, M.D., presumably, is the same Dr. Ireland who has been going about the country for some years giving courses on rectal disorders and other subjects Some years ago Dr. Charles L. Ireland's name appeared on the stationery of the American Association for the Study of Spondylotherapy. He was given as a member of the Board of Censors' Spondylotherapy, it will be recollected was the earliest fad to be expounded by the late Albert Abrams Spondylotherapy itself was a sort of glorified chiropractic

Dr. Ireland's present book is what might be expected from one whose scientific background permitted him to espouse spondylotherapy One learns from it that high blood pressure may be successfully treated with the sinusoidal current by placing one electrode directly over the third and fourth dorsal vertebrae and the other electrode over the tenth, eleventh and twelfth dorsal vertebrae. However one must be careful about the position of the electrodes because should they get just beneath the angle of the shoulder blades, that would be the author's treatment for low blood pressure

Dr. Ireland's knowledge of physics seems to be on a par with his knowledge of physical therapy for, we are told Voltage is push or pressure and is known as the unit of pressure or force Many of the illustrations in the book are evidently from stock halftones used by reputable manufacturers of physical therapy apparatus and the names of such manu-

facturers appear on the devices illustrated One wonders whether the concerns that presumably lent these cuts to Dr. Ireland had any idea of the scientific character of the book in which they were going to be used

*Therapie in Einzeldarstellungen Wissenschaftliche Grundlagen und praktische Anwendung* Herausgegeben von Prof. Dr. R. von den Velden und Priv.-Doz. Dr. P. Wolff Bewertung der Ovarialtherapie Von Prof. Dr. Ernst Laqueur Prof. Dr. G. A. Wagner und Prof. Dr. R. von den Velden Boards Price 6 marks Pp 108 Leipzig Georg Thieme 1933

This book, on treatment by means of ovarian preparations, is one of a series of monographs on therapy In its preparation three authorities collaborated Laqueur discusses the foundations on which ovarian therapy is based, Wagner takes up the consideration of this form of therapy from the standpoint of gynecology, and von den Velden expresses the views of an internist concerning the use of ovarian preparations in general medicine All agree that there are distinct fields of usefulness for ovarian substances, which are frequently successful even without the addition of other glandular products The authors discuss the various indications for preparations of the whole ovary, extracts of the ovary and ovarian hormones Among the gynecologic indications for ovarian therapy are hypoplasia of the genitalia, amenorrhea, oligomenorrhea and hypomenorrhea, hemorrhages, dysmenorrhea, sterility, habitual abortion, certain cases of leukorrhea, selected cases of pruritus, and menopausal symptoms Among the general indications for ovarian therapy the authors include disturbances of other glands of internal secretion, abnormalities in the vegetative innervation, and aberrations in single organs or organ systems such as the joints, the blood, the skin and the circulatory system In the present state of knowledge, the authors are a little too optimistic concerning the use of ovarian preparations Furthermore, a word of warning should be uttered because the indiscriminate use of these preparations may occasionally lead to harm

*Diseases of the Spinal Cord* By Williams B. Cadwalader M.D. Professor of Clinical Neurology University of Pennsylvania Medical School. Introduction by William G. Spiller M.D. Professor of Neurology University of Pennsylvania Medical School Cloth. Price \$5 Pp 204 with 72 illustrations Baltimore Williams & Wilkins Company 1932

The first five chapters of this book deal with the anatomy, physiology, symptomatology and topical diagnosis of the spinal cord In the succeeding ten chapters the various diseases are discussed The excellent diagrams and illustrations are helpful Quite properly, more space is given to diseases which wholly and chiefly affect the cord than to those which also affect the brain and peripheral nerves The paragraphs on treatment are conservative and brief but concise, and they bring out almost all generally accepted methods The use of iodized oil in level diagnosis is deprecated The important operation of chordotomy is described in the chapter on topographic diagnosis, where its usefulness in gastric crises is mentioned, but no reference is made to it in the brief paragraph on the treatment of tabes While drawing on a large personal experience, the author takes pains to state the experiences and views of others The 328 articles and books referred to in the bibliography are well chosen.

*Arbeiten aus der dritten Abteilung des Anatomischen Institutes der Kaiserlichen Universität Kyoto* Herausgegeben von Prof. Dr. Selgo Funakura Vorstand der Abteilung Die Schläfenbelzellen Von Dr. Kenji Yamashita Ausserseriale Monographie Nr. 1 Paper Pp 62 with illustrations Kyoto 1932

The author has made an interesting book, which divides itself into six parts He has investigated the porosity of the macerated temporal bone, individual variations of pneumatization in the temporal bone, the correlation between pneumatization and various anatomic measurements the mucous membrane of the pneumatic cells of the mastoid process, the surgical anatomy of the perilabyrinthine cells, and the surgical anatomy of the pneumatized petrous tip with considerations of surgical approach to the tip All these studies are full of interest but it is curious to see that German authorities are quoted almost exclusively and the important work of American otologists with particular reference to the last named subject is completely ignored Such men as Eagleton and Kopetzky deserve a place in discussions of surgical approach to the petrous tip Apart from this these investigations must be thought provoking to the studious otologist.

**Textbook of Medicine** By Various Authors Edited by J J Conybeare M.C. M.D. F.R.C.P. Assistant Physician to Guy's Hospital  
Second edition Cloth Price \$7 Pp 1004 with 40 illustrations.  
Baltimore William Wood & Company 1932

This textbook was prepared with the idea of including as many of the essentials of medicine within as small a compass as possible, while avoiding a book in the nature of a synopsis. It is a compilation of material by various authors. In this edition, additional information is given concerning the prevention and attenuation of measles by means of convalescent serum and whole blood, and the newer methods of diphtheria immunization are presented. The sections on pernicious anemia and purpura have also been brought down to date. The information is given in a clear, concise manner. Unlike other textbooks of medicine, this book includes chapters on diseases of infants and disorders of the skin. The book will be found valuable for the student as well as for the practitioner.

**Medizinische Praxis Sammlung für ärztliche Fortbildung** Herausgegeben von Prof. Dr. L. R. Grote, Chefarzt der C. von Noorden Klinik Frankfurt a. M., Prof. Dr. A. Fromme, Direktor der chirurgischen Abteilung des Stadtkrankenhauses Dresden-Friedrichstadt und Prof. Dr. K. Warnekros, Direktor der Staatlichen Frauenklinik zu Dresden. Band XIV. Elektrokardiographie für die ärztliche Praxis. 14 Vorlesungen zur Einführung in die elektrische Untersuchungsmethode des Herzens und ihre praktischen Ergebnisse bei rhythmischem und arrhythmischem Herzschlag. Von Prof. Dr. Erich Boden, Direktor der Med. Poliklinik der Med. Akademie Düsseldorf. Paper. Price 20 marks. Pp 161 with 96 illustrations. Dresden Theodor Steinkopff 1932.

This is an excellent monograph, written in simple style, and profusely illustrated by carefully analyzed electrocardiograms and diagrams. It would be possible, by a careful perusal of the diagrams, with reference to the text, to arrive at a clear understanding of the subject of electrocardiography. The book consists of fourteen lectures divided into two sections, one dealing with the anatomic, physiologic and electrical backgrounds of the electrocardiogram, and a portion on experimental work, the other with the practical interpretation. The portion on experimental work does not add much to the development of the subject. In the practical section the author uses the case report method with a few illustrations analyzed in detail, a method suitable for the uninitiated. The development is systematic, the presentation is simple, and the author has avoided entering into any controversies. Great emphasis is laid on practical considerations, which are presented in succinct fashion and will appeal to the average clinician interested in this field. The illustrations employed are for the most part typical. Better illustrations of nodal extrasystoles and of paroxysmal nodal tachycardia might have been used. No illustrations are given of the digitalis T wave and the section on coronary disease could have had better illustrations. No mention is made of shifting pacemaker and nodal rhythm which, in view of the scope covered by the author, should have been included. The author fails to mention the recent controversy on the location of extrasystoles and bundle branch block and he employs the classic terminology. The author uses the circus movement theory—for which there is no proof—to illustrate the mechanism of auricular fibrillation and flutter. He realizes that this theory has not been widely accepted but has apparently succumbed to its dramatic possibilities. These are only minor criticisms and do not at all detract from the excellence of the book, which should appeal to the physician desiring to become acquainted with the field of electrocardiography.

**Applied Bacteriology** By Thurman B. Rice M.M. M.D. Professor of Bacteriology and Pathology Indiana University School of Medicine and Training School for Nurses, Indianapolis. Price \$2.50 Pp 276 with 105 illustrations. New York Macmillan Company 1932.

This is a textbook written expressly for use in nurses training schools. There are many books on the market for this purpose and more appear each year. However, this is the best that has come to our attention. It is written in a readable style, perhaps at times becoming rather too popular, but the author has limited his discussions to subjects of interest to nurses and has not extended them beyond the capacity of his audience. It is doubtful whether the use of an infection equation aids in clarifying the discussion of body resistance to disease. The drawings of fields as seen under the microscope are a trifle startling. The author admits that they are overdrawn—far too mild a term. A chapter on hematology might well be included in some future edition. It is a pleasure to recommend the book.

## Medicolegal

### Tuberculosis in Relation to Overexertion

(*Grates v. Burns Lane & Richardson (N. J.), 160 A. 399.*)

The claimant, while in the course of his employment as a plumber, lifted with the aid of a helper a pipe 22 feet in length and weighing from 160 to 165 pounds. As he did so he felt something "wrong inside." He suffered pain and became dizzy. Thereafter he spit blood for several days. Finally he was obliged to give up work and his physicians diagnosed his condition as tuberculosis. He claimed compensation and, at a hearing before the compensation bureau, physicians called by him testified that the extraordinary strain involved in lifting the pipe had induced activity in bacteria which had been dormant. The bureau awarded him compensation but its decision was reversed by the court of common pleas, Passaic County, which held as a matter of law that the occurrence was not an accident within the meaning of the workmen's compensation act. The claimant then appealed to the supreme court of New Jersey.

The sole question to be determined, said the supreme court, is whether the occurrence was an accident within the meaning of the workmen's compensation act. There is no question that it arose out of and in the course of the claimant's employment and there is no doubt as to the claimant's condition. The bureau found that the occurrence was an accident. The court of common pleas held that it was not an accident within the meaning of the compensation act. In view of the evidence adduced at a hearing before the bureau, was the court of common pleas justified in reversing the decision of the bureau? This case, in the view of the supreme court, is controlled by *Winter v. Atkinson-Friselle Co.*, 88 N. J. Law 401, 96 A. 360, decided by the Court of Errors and Appeals. There compensation was awarded on a showing that a strain from heavy lifting had produced death from heart disease. There was evidence that a month prior to the strain the employee had suffered a fall which might have produced or aggravated a heart condition. However, it was held that a finding by the bureau that the strain caused the condition which resulted in death was "a deduction or inference reasonably gathered from the facts of the case." As the record in the present case was viewed by the supreme court, there was substantially no dispute as to the facts. There was some conflict of opinion between the medical experts as to the presence of the alleged tuberculous condition and as to whether the condition complained of could be caused by overexertion. The bureau and the court of common pleas, said the supreme court, both found that the claimant's condition which produced his disability was the result of strain caused by lifting the pipe. On the facts so found it was error for the court of common pleas to conclude as a matter of law that the claimant did not meet with an accident within the meaning of the compensation act. The supreme court concluded, therefore, that the claimant met with an accident which caused his disability, that the accident happened while he was at work and therefore in the course of employment and that it was brought on by the work and therefore arose out of the employment. The award of the compensation bureau was affirmed.

**Hospitals Association's Right to Benefits of Mechanic's Lien.**—Remington's Compiled Statutes, Washington Section 10320, authorizes a municipal corporation, which has contracted for the erection of designated public works, to retain a certain percentage of the moneys due the contractor "as a trust fund for the protection and payment of any person or persons mechanic, subcontractor or material-man who shall perform any labor upon such contract or the doing of said work and all persons who shall supply such person or persons or subcontractors with provisions and supplies for the carrying on of such work." The plaintiff hospital association contracted to furnish the medical surgical hospital and ambulance service, and first aid kits for the treatment of workmen injured in erecting a certain public work. The plaintiff said the Supreme Court of Washington is not entitled to the benefits of the statute quoted. While a mechanic's lien is a favorite of the law, the



appears to be wiser to treat the osteomyelitis first, and subsequently to drain the abscess to avoid the danger of carrying a secondary infection from the osteomyelitic region into the brain. The exception to this rather general principle is that when there is on the dura a large, granulating area which exudes pus, one is justified in proceeding with the exploration. However, caution should be employed during incision of the dura. I believe that the best result from surgical treatment of brain abscess depends on the following factors. One should not attempt to drain a brain abscess until liquefaction and necrosis have taken place, which means that the abscess has passed into the second stage of its development and presents a distinct capsule. If one waits until this has taken place, one will find that immunity has been established, that the septic temperature has become a low, continuous temperature, one degree or less in excess of normal. The number of leukocytes in each cubic millimeter of blood will have receded from 30,000 or 40,000 to 12,000 or 14,000, and the number of cells in the spinal fluid will likewise have receded from high to normal. When drainage is instituted, it should be adequate and continuous. Regeneration of bone to repair defects in the skull depends on the periosteum and osseous tissue. The skull readily regenerates from either of the tables, and when one table has been removed the defect is soon closed by the osseous proliferation. When both tables of the skull have been removed, regeneration can take origin from the periosteum or it may spring from flakes of bone attached to the dura or muscle. Defects also can be closed by bone grafts, and the one most suitable is the osteoperiosteal graft, which includes the periosteum and outer table of the skull taken from a normal area. It is necessary that the edges of the bone in the defect be freshened before the graft is transferred to the defect. The periosteum covering the transplant should be cut larger than the bony graft in order that it may be sutured to the periosteum about the defect. Tibial and rib grafts can be employed but are found to be more difficult to handle and to shape in such a way as to fill the defect.

#### The Division of Plastic Surgery

DR JOHN STAIGE DAVIS, Baltimore. Many years ago I began to advocate the splitting off of plastic surgery from the general surgical tree, as had already been done in orthopedic and in genito urinary surgery. I urged that a separate division be established and that special training be given in every large surgical department in this highly technical and difficult branch of surgery. The suggestion has been adopted in various places, and I am glad to say that there are now flourishing divisions of plastic surgery in a number of the great teaching hospitals and that some of the class A schools are giving the students courses that at least show them the scope of the subject. Plastic surgery is that branch of general surgery which deals with the reconstruction of injured, deformed or lost parts all over the body, with the reestablishment of function and with the restoration, as far as may be, of normal appearance. These deformities may be congenital or acquired and while in many instances the lesions include the skin and adjacent soft parts frequently the deeper tissues are involved and often the supporting framework. With the modern development of surgery and its specialties, it is impossible for any surgeon to be proficient in every branch of surgery or to be an expert in even one or two of the surgical specialties, in addition to his general surgery. For any surgeon to attempt this work without adequate special training and sound judgment except where no trained plastic surgeon is available, is entirely wrong from the standpoint of the patient and should not be done. No large teaching surgical clinic is doing its best by its patients or students if this work is done by general surgeons who are not specially trained to undertake it. The cooperation of the head of the general surgical service is necessary in order to organize a division of plastic surgery, and when this has been obtained the success of the venture depends on personnel facilities opportunity to teach and cooperation of other departments. No one can obtain the training necessary to make a plastic surgeon in any six weeks course anywhere as it takes a great deal of time to obtain the experience and sound judgment that are essential to success. Until the desired facilities can be obtained it behooves those who are in charge of plastic divisions to continue their work with the object of improving the service to patients of bettering

teaching and research, and of becoming more useful to every clinical department of the hospital.

#### A Case of Suppurative Pericarditis

DR GILBERT COTTAM, Minneapolis. In this case the pus was found by puncture in the fourth interspace, a little external to the right nipple. The exploring needle had to be directed well toward the median line, and the pus was rather deep. Using a needle so inserted as a guide, I resected, under local anesthesia, about 2 inches of the right fifth costal cartilage just to the right of the sternum. Both layers of the pleura were adherent and were cleanly incised, no pus appeared and no lung tissue was seen. Burrowing backward and toward the median line I found the needle in a thick walled, bulging sac, evidently the pericardium, and, on making a free incision, secured the evacuation of a large amount of pus, roughly estimated at 1,000 cc. As the fluid escaped I could feel the impulses of the heart against the tip of my left forefinger inserted in the sac. A large calibered soft rubber tube, about 8 inches long, was inserted and pushed backward and upward until it met resistance. This tube was gradually withdrawn from day to day and removed on the fourteenth postoperative day. The patient recovered completely. I was impressed with the ease with which the drainage was established. It was done quickly and without unpleasant reaction. The drainage was adequate. The most comfortable position the patient assumed was when lying on his right side and then the flow was directly downward. The sepsis gradually abated. The cardiac function improved from the start. The treatment is purely a matter of adequate surgical drainage with the least interference and the utmost conservation of a desperately ill patient's resources. No drainage can be considered adequate that does not provide for the evacuation of the deeper recesses of the pericardium. This is best accomplished by a right sided approach, preferably through the fifth costal cartilage, fairly close to the sternum. The internal mammary vessels may be tied, the pleura displaced outward and the pericardium back of the heart readily reached with a tube through which dependent drainage can easily be secured with slight change of posture.

#### Sweat Gland Tumor

DR KELLOGG SPEED, Chicago. Mrs M C, aged 34, was admitted to the hospital, April 19, 1932, and discharged, April 25. Her complaint on admission was of a tumor on the anterior surface of the proximal half of the left thigh, present since birth as nearly as she knew, and of varicose veins in the left leg which had been present about two years. The tumor on the thigh had always been painless except when traumatized, as it often was in her occupation as housewife when engaged in cooking or working at a table. These irritations were repeated many times a day until the central portion of the tumor had been worn away, leaving an ulcerated mass about 7 cm wide in its longest axis surrounded by a raised ring of tissue 3 cm wide, which near the border was quite white and hard and blended off somewhat abruptly into the surrounding skin. The patient had of recent years been unable to wear stockings that covered the tumor, and in place of the conventional garter fastening to her corset above she wore a circular elastic band on that leg to hold up her stocking. This band was very tight fitting and was believed to be the cause of the varicose veins in this leg. There were no similarly enlarged veins in the right leg. The tumor undoubtedly originated in early infancy and its growth had been steady ever since it was first noticed, its relative size compared to that of the thigh as a whole remaining about the same. It had not undergone any sudden increase in size or any rapid change in appearance and caused little pain until it was bumped. The tumor surface was purple with a white border and the red raw surface of its upper central portion was very slightly infected. As a whole the tumor was freely movable in the deeper tissues of the thigh. Its exact size was 10 by 5 by 3 cm. There was a small painless adenopathy in the left femoral region. All laboratory examinations of blood urine, and blood pressure gave normal results. The gross appearance and hardness of this tumor made a diagnosis of very slowly growing epithelioma with ulcerated surface most plausible and yet the long history only partly backed up by the adenopathy in the groin negated this conclusion. April 20 1932 a biopsy was made and immediate frozen sections



## Current Medical Literature

### AMERICAN

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Titles marked with an asterisk (\*) are abstracted below

### American J Obstetrics and Gynecology, St Louis

24 481 634 (Oct) 1932

- Constitutional Factor in Gynecology and Obstetrics G Gellhorn, St Louis—p 481
- Pelvic Endometriosis and Tubal Fimbriae. J A Sampson Albany N Y—p 497
- Diagnostic Value of Radiopaque Contrast Mediums in Gynecology and Obstetrics. A M Campbell J D Miller, T O Menees and L E. Holly Grand Rapids Mich—p 542
- Complications of Radiation Treatment in Gynecology F A Pemberton Boston—p 552
- \*Twelve Years Experience with Uterotubal Insufflation Diagnostic and Therapeutic. I C Rubin New York—p 561
- \*Selection of Appropriate Operation for Cure of Prolapse R T Frank New York—p 574
- Congenital Absence of Vagina and Its Treatment. J C Masson Rochester Minn—p 583
- \*Treatment of Gonococcal Infections by Artificial (General) Hyperthermia Preliminary Report S L Warren and K M Wilson Rochester N Y—p 592
- Present Position of Version and Extraction Analysis of Shifting Incidence of Version and Extraction High Forceps and Cesarean Section at Michael Reese Hospital J L Baer R A Reis and J J Lutz Chicago—p 599
- Prophylactic Treatment of Thyroid Dysfunction and Importance of Basal Metabolism Studies in Obstetrics and Gynecology C H Davis Milwaukee—p 607
- \*Intra Uterine Radium Therapy as Conservative Method of Treatment. W T Dannreuther New York—p 611
- Results with Cordotomy for Relief of Intractable Pain Due to Carcinoma of Pelvic Organs F C Grant Philadelphia—p 620
- A New Axis-Traction Forceps E B Piper Philadelphia—p 625

**Uterotubal Insufflation**—Rubin employed insufflation as a diagnostic and therapeutic measure in 2,273 cases of sterility and in 154 additional cases for other indications. There were 3,600 insufflations performed in all. Genital inflammations, menstruation and the premenstrual phase, abnormal bleeding from the genital tract pregnancy and severe constitutional diseases contraindicate the test. There were no serious sequelae in the 3,600 insufflations. The most favorable time to insufflate the tubes is from the fourth to the seventh day following the cessation of the menses. The uniform pressure rate of flow of gas within definite time limits is essential for safety. Carbon dioxide is preferred because of its rapid resorption. With the aid of the kymograph the presence of tubal patency, of non-patency, tubal stenosis peritubal adhesions and uterotubal spasm can be determined. The interpretation of the results of insufflation has been confirmed by experimental methods and by observations at 186 laparotomies and 132 iodized poppy-seed oil examinations. No complications arose in the 132 cases from insufflation, although there were sequelae following the iodized poppy seed oil method in 9 cases. Of the 2,192 sterility patients in whom the status of the tubes was satisfactorily determined, 947 or 43.2 per cent had normal patency, 1,245 or 56.8 per cent, had various degrees of tubal obstruction, and 572, or 26.1 per cent of the total series had complete tubal obstructions. The incidence of tubal obstructions following induced abortions was 60.22 per cent following appendicitis 60.46 per cent. Obstructions were found to be associated with fibroids in 57.96 per cent and with retroflexions in 65.18 per cent. The residual tube following an extra uterine pregnancy was found obstructed in 51.94 per cent. Tubal insufflation appears to have a definite therapeutic value in sterility. Of the 393 patients who became pregnant after insufflation 123 or 31.3 per cent had peritubal adhesions or stenosed tubes. Pregnancies occurred in 67.59 per cent six months after insufflation in 42.21 per cent within two months and in 27.9 per cent within a month. Pregnancies followed treatment in 12 women who were sterile more than fifteen years. Insufflation was the only treatment employed in 247 of the 393 patients who became pregnant (62.60 per cent).

Improvement of dysmenorrhea followed insufflation in 66.6 per cent of 57 patients.

**Appropriate Operation for Cure of Prolapse**—Frank states that the results he obtained for the cure of prolapse were not as satisfactory, when critically examined, as those of other gynecologic operations. He obtained the best results in cases of rectocele and cystocele, unaccompanied by descensus. He plans to continue using his technic for anterior and posterior colporrhaphy in cystocele and rectocele unaccompanied by prolapse, in the absence of cystocele and in the presence of incontinence, not to subject patients to operative intervention unless every psychic and neurologic cause for this condition can be excluded (if operation is to be performed, he intends to use a transverse fascial strip, either free or pedicled across the neck of the bladder), in the presence of prolapse, in young women, to employ the Fothergill operation, in old women with complete prolapse, to utilize the simplified vaginal hysterectomy, in the course of abdominal hysterectomy complicated by descensus and cystocele, to employ the Polk operation with ventrification of the stump, and in the poor operative risk in the aged, as heretofore, the Le Fort operation.

**Treatment of Gonococcal Infections**—Warren and Wilson present the results obtained in twenty women with various forms of gonorrheal infection who were treated by general hyperthermia. The results were satisfactory and led to a rapid disappearance of symptoms, as well as a disappearance of the organisms. The failures in their series were due to deficient treatment or to the fact that the particular strain of gonococcus encountered was more resistant to heat than is the average strain of organisms. The authors emphasize the fact that, even in the failures, they observed no evidence which would point to an exacerbation of the condition present, rather the reverse holding true. They present their preliminary report as a clinical demonstration of the fact, established in the laboratory, that the usual strains of gonococci can apparently be destroyed in the body after exposure to high temperature for definite lengths of time. Their technic is as follows: They administer 2 Gm of sodium bromide and 0.65 Gm. of barbitol two hours before treatment is begun, 0.486 Gm of chloral hydrate is given by mouth at the beginning of the treatment and the latter may be repeated three hours later. The patient is placed lying on a cot in a well insulated cabinet, the head being allowed to remain outside. The temperature of the air in the cabinet is heated by means of several carbon filament lamps, totaling about 650 watts. The body temperature is raised by passing the diathermy current through the thorax between block tin electrodes held in place by a many-tailed binder. After the desired temperature level has been attained (41.5 C, or 106.7 F), as indicated by a rectal thermometer, the current is shut off and the electrodes are removed. The body temperature can then be maintained by means of the light bulbs in the cabinet, which are turned on or off as indicated. With a well insulated cabinet, heat loss from evaporation of sweat is minimal and may be further reduced by placing an open vessel of water in it. After the patient has been subjected to the high temperature for the desired length of time, the lights are shut off, the cabinet is opened and the patient's body is exposed to the room air. So long as the skin temperature does not fall 3 degrees C below the general body temperature, no discomfort is experienced. The time required for the restoration of normal temperature depends on the obesity of the patient.

**Intra-Uterine Radium Therapy**—According to Dannreuther, radium therapy is applicable as a conservative method of treatment in selected cases of fibromyoma, fibrosis uteri, endometrial hyperplasia, precancerous endocervicitis, and tuberculosis of the endometrium after bilateral salpingectomy. It is also serviceable for deliberate sterilization when laparotomy would be unduly hazardous. About 18 per cent of white patients with fibroids requiring treatment are suitable for radium therapy. Larger doses of radium are necessary in cases of fibrosis uteri than for the treatment of fibroids. Radium therapy is an excellent substitute for hysterectomy in cases of endometrial hyperplasia. Transfixion needles, as well as intra-uterine applications, are useful in the treatment of precancerous endocervicitis. Radium therapy will arrest the bleeding from a tuberculous endometrium after tubal extirpation. Radium therapy has little place in the bleeding of puberty and adolescence. Radium therapy does not interfere with wound

**Use of Tuberculin in Ophthalmology**—Eggston believes that the ocular lesions frequently diagnosed as tuberculosis in a patient with positive reactions to tuberculin are really not due to infection by tuberculous bacteria, with the formation of a tubercle, but are of an allergic nature, if they are in any way related to tuberculosis. Actual tuberculous infection of the eye is relatively rare. Injections of tuberculin are of value in the allergic cases, if given properly in order to desensitize the patient, but of questionable value in active tuberculous patients. Tuberculin is the foreign protein of choice if the cellular metabolic mechanism of the tissue is to be excited, as a greater response occurs to a protein if there is cellular sensitization.

**Repair of Extra-Ocular Muscles**—It being impossible to study the repair following operation on the extra-ocular muscles of the human being, Carroll and Blake performed the various operations in common use on seventeen rabbits. These animals were then killed at intervals of from two to forty days, and gross and microscopic observations were made of the muscles and their attachments to the eyeball. Seventeen simple tenotomies, sixteen attachments with sutures, eight tuckings and twelve resections were performed. The authors found that after simple tenotomy the muscle was sometimes firmly united to the sclera, but in other instances only loosely connected to it, even after from twelve to fourteen days. The reason for this was that the muscle attached to loose episcleral tissue or that the blood clot formed at operation failed to hold it firmly against the sclera until new connective tissue formed. In one case the muscle had entirely failed to attach itself and was discovered back of the globe. Tenotomy should be considered as a procedure that carries with it a wholly unnecessary danger, which can be avoided by merely attaching the muscle to the sclera with sutures. In the seventeen instances in which sutures, plain chromic or silk, were used, the union was firm and after the tenth day strong fibrous tissue joined muscle to sclera. The process of repair following a tucking consisted in the formation of new fibrous connective tissue between the proximal and distal parts of the muscle as well as the conversion of the tuck into fibrous tissue containing scattered muscle fibers. One section through an eye on which an attachment with sutures was performed showed that the needle had by mistake pierced so deeply into the coats of the eye that retina, choroid and sclera were replaced by fibrous tissue. It was interesting to find that the trauma incurred in cutting the sections had been sufficient to detach completely the retina, except in the one region where injury had resulted in the formation of new fibrous connective tissue. Histologic sections demonstrated that a blood clot may exist between the muscle and sclera distal to the point of attachment and that the clot may become organized so that the muscle is firmly bound to the sclera at some distance from the desired point of insertion.

### Arch Physical Therapy, X-Ray, Radium, Chicago

13 581-636 (Oct.) 1932

- Limitations of Physical Therapy in Otolaryngology. E. P. Fowler. New York—p. 581.  
1. Electrocoagulation of Tonsils: Rational Procedure? F. B. Balmer. Chicago—p. 585.  
2. Electrocoagulation: the Best Method for Removal of Faucial Tonsils? S. R. Skillern. Philadelphia—p. 587.  
Electrocoagulation Technique for Removal of Tonsils. G. A. Dillinger. Pittsburgh—p. 589.  
End Results of Electrocoagulation of Tonsils with Biactive Electrode. J. A. Hayman. New York—p. 592.  
Conervative Aspects of Tonsil Coagulation. J. F. Strauss. Chicago—p. 594.  
Pitfalls in Tonsil Coagulation. R. A. Barlow. Rochester, N. Y.—p. 598.  
Essential Factors in Electrocoagulation: Excursion of Tonsils. E. R. Mallard. New York—p. 600.  
Effect of Ultraviolet Light in So-Called Neuralgias. D. Kobak and E. Frankel. Chicago—p. 610.  
14. Effect of Mercury Line 254 mμ. A. Bachem. Chicago—p. 614.  
Light Therapy on Blotchy Rash: Selection for Its Application. H. F. Wolf. New York—p. 619.

**Electrocoagulation in Removal of Faucial Tonsils**—Skillern considers electrocoagulation a method of removing the tonsil that every laryngologist should master as he will find it is necessary occasionally to remove them by this procedure. It should be taken into account that the operation is of choice but as the operation is not easy. It is the most difficult and dangerous method in the hands of the inexperienced. The dangers and difficulties are multiple in ratio to the lack of knowledge, and

no one who is not capable of removing tonsils by other surgical technics and of meeting all complications that may arise during or after the operation should attempt their removal by electrocoagulation. For the average individual, electrocoagulation with its multiple applications of the needle cannot be mentioned in the same category with that of a clean surgical tonsillectomy by a trained operator.

**Pitfalls in Tonsil Coagulation**—Barlow believes that electrocoagulation is an essential part of physical therapy. The technic of electrocoagulation tonsillectomy, in his opinion, requires more care, judgment and dexterity than the approved methods of surgery. Many men of national repute have tried the method and, after a week or two, have discarded it and become confirmed antagonists. The stumbling blocks and pitfalls in electrocoagulation are the apparent simplicity of the method, the sales talk of some salesman encouraging any one to buy a machine and use the method, the necessity of developing a technic on private patients without competent instruction, the tendency to hurry and coagulate too large an area at each treatment, the possibility of coagulating into the muscle and having severe pain after treatment, the use of too much local anesthetic and the possibility of causing a flare up of old quinsy by not allowing sufficient time to elapse after an attack of tonsillitis.

**Ultraviolet Radiation in So-Called Neuralgias**—Kobak and Frankel are led to the conclusion, from clinical studies during the past five years, that ultraviolet irradiation provoking a sharp, local erythema definitely produces an amelioration of symptoms in so-called cervicobrachial neuralgias. Checked by controls, in which similar conditions were treated with recognized medication, the results obtained by means of local ultraviolet irradiation demonstrated satisfactory and at times permanent relief. In addition, the simplicity of the technic utilized in these instances is such that any physician with an ordinary background in ultraviolet procedure can secure results similar to those obtained in their series. They base their conclusions on a series of 141 cases. Of the 83 patients who reported for further observation, 51 have been discharged as cured, 21 were greatly improved, 7 were slightly improved and 4 were not improved. Ultraviolet irradiation was employed in all the cases according to the method accepted in the international literature, namely, the erythema dose.

### Arkansas Medical Society Journal, Little Rock

29 119-143 (Nov.) 1932

- Evaluation of Surgical Treatments for Peptic Ulcer. S. J. Wolfermann. Fort Smith—p. 119.  
Cysts of Antrum. T. E. Fuller. Texarkana—p. 127.  
Report of an Unusual Case. W. T. Lowe. Pine Bluff—p. 130.

### Canadian Medical Association Journal, Montreal

27 347-462 (Oct.) 1932

- \*Further Studies on Anterior Pituitary-Like Hormone with Especial Reference to Irregular Uterine Bleeding. A. D. Campbell. Montreal—p. 347.  
Kupffer Cell Migration. D. A. Irwin. Toronto—p. 353.  
\*Use of Colloidal Thorium in Clinical Medicine. R. Gotthieb. Montreal—p. 356.  
\*Operative Treatment of Acute Appendicitis with Perforation. F. B. Gurd. Montreal—p. 360.  
Treatment of Lobar Pneumonia. C. P. Howard and C. W. Fullerton. Montreal—p. 367.  
Trachoma in Canada. W. G. M. Byers. Montreal—p. 372.  
\*Simple Gout: Relationship Between Chronic Foci of Infection and Simple Thyroid Enlargement in Children. A. C. Abbott. Winnipeg. Manit.—p. 376.  
Discussion of Pancreatic Necrosis. Case Report. J. D. Mills and B. B. Sparks. Toronto—p. 381.  
Rupture of Uterus. Report of Case. S. Kobrinsky. Winnipeg. Manit.—p. 385.  
\*High Carbohydrate Low Fat Diet for Diabetic Children. H. C. Jamieson. Edmonton. Alta—p. 389.  
Mouth Foci of Infection and Their Management. J. W. Gerrie. Montreal—p. 393.  
Psychiatric Problems and Responsibilities of General Practitioner. W. T. B. Mitchell. Montreal—p. 397.  
Primary Carcinoma of Liver in Infants and Young Children. G. R. Pirie. Toronto—p. 401.  
Xerophthalmia. Report of Case. P. V. MacDermot and R. R. Struthers. Montreal—p. 403.  
Hematuria. D. W. MacKenzie. Montreal—p. 405.  
Sight-Saving Classes in Toronto. F. A. Aylesworth. Toronto—p. 407.

**Anterior Pituitary-Like Hormone**—From a study of eight-four cases of irregular uterine bleeding Campbell concludes that there are several types of irregular uterine bleeding,

These phases do not constitute separate entities but merely stages of development of a single progressive disease, and in clinical practice the two frequently overlap

**Bleeding from the Anus**—Drueck points out that blood escaping from the anus may be slight or profuse, occasional or frequent, and may occur during, in the intervals between, or after defecation. It may be discharged as pure blood, fluid blood or clotted blood, or it may be mixed with mucus, pus or feces. Inquiry must be made regarding these conditions and also whether it is mixed in with the feces or only streaks the surface of the mass. Persistent bleeding after each defecation or that occurring independently of the act indicates that the source is within the bowel and may be due to (1) internal hemorrhoids, (2) prolapse of the rectum, (3) erosion or ulceration of the rectal wall, (4) cancer of the rectum or sigmoid, (5) stricture, (6) polypi, (7) multiple polyposis or adenomas, and (8) villous growths. Bleeding from the anus may also be due to intussusception of the sigmoid with its repeated traumatism, from the straining during frequent attempts at defecation, to strangulated hernia, and, in children, to intussusception, the latter especially in the presence of blood stained stools composed principally of mucus and attended with tenesmus. In an acute and unusually severe colitis in children it may manifest itself by blood streaked stools. The mild follicular or the severe ulcerative form of enteritis often produces bloody stools. Hemorrhagic proctitis occurs usually in young adults and is the cause of profuse bleeding from the rectum with every stool. Cancer or ulceration of the large or small intestine, as well as the perforation resulting from such ulceration, may explain the appearance of blood in the feces. Corrosive poisons, especially arsenic, phosphorus and mercuric chloride, may determine the presence of streaks of blood in the passages. The rupture of an aneurysm of the abdominal aorta into the alimentary canal serves to explain some cases of large hemorrhage from the intestine. Engorgement of the portal circulation from cancer or cirrhosis of the liver, or autotoxic states such as cholemia and uremia, or as the result of valvular disease of the heart, pulmonary emphysema, or portal thrombosis, demands consideration as a cause of intestinal hemorrhage. In jaundice, whatever its origin, blood may be contained in the stools. Injuries of the abdomen, and intestinal parasites may give rise to bleeding from the intestine. Hemorrhage may be incident to various neuropathies, vicarious menstruation and burns. Operations about the anus and rectum are always accompanied by a certain amount of bleeding.

**Study of Various Pregnancy Tests**—According to Wilson and Blanchet, the diagnosis of pregnancy either early or late is at times difficult. Uterography, while potentially dangerous, is valuable, when carefully done, as a diagnostic medium in early pregnancy. The x-rays, though subject to technical difficulties, are of immense value as an adjunct in the diagnosis of pregnancy. The biologic tests yield the more certain results and are devoid of danger to both mother and child. The Friedman or Schneider modification of the Aschheim-Zondek test is to be preferred to all other modifications because of its accuracy and availability of the animals used, since rabbits are easily procured and it is not necessary to determine rigorously their weight. Moreover, it is not necessary to kill the animal, and the same animal may be used in other experiments. The reaction is macroscopic and the response is rapid, requiring only from fifteen to forty-eight hours. A negative observation does not preclude the possibility of pregnancy, repeated negative observations are reliable. The authors conclude that since all methods known up to the present time for the diagnosis of early pregnancy are uncertain and unreliable, the obstetrician is justified in exhausting various laboratory tests for aid. According to their reliability and danger to the fetus and mother, the value of the tests is in the following order: biologic tests, x-rays, iodized poppy seed oil. The Aschheim-Zondek is accepted as the most reliable of the biologic tests, and most observers agree that its results are accurate.

#### Indiana State Medical Assn. Journal, Fort Wayne

25 2518 (Oct. 13) 1932

Use of Methylene Iodine in General Abdominal Surgery T. B. Noble, Jr.  
Methylene Iodine in General Abdominal Surgery T. B. Noble, Jr.  
Cancer of the Stomach and Duodenum M. F. Fennell, Esq.  
The Value of the X-ray in the Diagnosis of the Stomach and Duodenum M. F. Fennell, Esq.  
The Value of the X-ray in the Diagnosis of the Stomach and Duodenum M. F. Fennell, Esq.

#### Journal of Immunology, Baltimore

23 269 347 (Oct.) 1932

Comparison of Toxicity of Various Meningococcus Preparations. C. V. Riley and M. A. Wilson—p. 269  
Comparison of Different Diphtheria Antitoxin Serums with Regard to Their Rate of Flocculation C. Siebenmann—p. 285  
Studies on Meningococcus I Endotoxin. W. G. Malcolm and B. White—p. 291  
Notes on Antigenic Activity of Hemolytic Streptococci from Different Types of Infection Mary W. Wheeler—p. 311  
Meningococcus Antitoxin I Prophylactic and Therapeutic Tests on Guinea Pigs N. S. Ferry, Detroit—p. 315  
Id. II. Therapeutic Tests on Monkeys N. S. Ferry, Detroit—p. 325

#### Journal of Urology, Baltimore

28 381 508 (Oct.) 1932

Balanced Urinary System The Ramon Gutierrez Lecture H. Wade, Edinburgh, Scotland—p. 381  
\*Tumors of Renal Pelvis Review of Literature and Report of Case. D. W. MacKenzie and M. Ratner, Montreal, Canada—p. 405  
Kidney Lesions as Cause of Gastro-Intestinal Symptoms F. H. Colby, Boston—p. 419  
\*Pyonephrosis with Nephrobronchial Fistula. J. L. Crenshaw, Rochester, Minn.—p. 427  
\*Value of Serial Pyelograph in Diagnosis. T. D. Moore, Memphis, Tenn.—p. 437  
Roentgen Symptomatology of Infected Urinary Passages in Combination with Classification of Urinary Tract Infections. R. E. Cumming and H. A. Jarre, Detroit—p. 455  
Urethrography M. A. Nicholson and M. J. Fiala, Duluth, Minn.—p. 461  
Mercurochrome and Iodine as Disinfectants of Skin J. W. Smith, Jr., Fort Shafter, Hawaii—p. 485  
Transurethral Application of Ultraviolet Irradiation and Ventilation to Interior of Bladder for Relief of Tuberculosis and Other Infections of This Organ J. R. Caulk and F. H. Ewerhardt, St. Louis—p. 503

**Tumors of Renal Pelvis**—MacKenzie and Ratner believe that new growths of the renal pelvis, as compared with those of the kidney parenchyma, are relatively infrequent. They estimate that on an average only from 5 to 7 per cent of all renal tumors occur primarily in the kidney pelvis. The types of tumor that arise in the renal pelvis are similar to those that occur in the bladder. Almost all of them are derived from mesodermal tissue. From 40 to 50 per cent of all tumors of the renal pelvis are papillomas. They are usually multiple and appear as villous or wartlike growths similar to those found in the bladder. Papillary epithelioma comprises from 20 to 30 per cent of the growths of the renal pelvis. Alveolar carcinoma is probably a far advanced papillomatous growth which has lost its papillomatous character. Squamous cell carcinoma constitutes a small group but a fair number of cases have been reported in the literature. Histoid growths of the pelvis are extremely rare. The simple papilloma is benign but has the inherent quality of spreading. The majority of the cases on record have occurred between the ages of 40 and 60 years. Males seem to be affected more often than females. In a large series of cases that Thomas and Regnier reported, 62 per cent occurred in males. Chronic infection of the renal pelvis seems to play a prominent part in these tumors. There does not seem to be any special predisposition to new growths in the congenitally abnormal pelvis. The most obvious symptom in tumors of the renal pelvis is hematuria. In a large number of cases, no mass can be palpated, this is particularly true when the growth is small or when it is spreading toward the upper pole of the kidney. Many patients with growths of the renal pelvis, particularly papillomas, will volunteer the information that they are always passing small pieces of tissue covered with blood clot. Loss of weight and strength are late symptoms and occur when metastases are present. Frequency, urgency and dysuria occur only when the bladder becomes irritated by blood clots or pieces of tumor. The diagnosis may be made from the history, symptoms, urinary observations and, finally, cystoscopy and pyelography. The treatment consists of nephrectomy and complete ureterectomy. The prognosis, even in simple papilloma, is to be guarded.

**Pyonephrosis with Nephrobronchial Fistula.**—The occurrence of a perinephric abscess rupturing into a bronchus, is rare and the cases reported in the literature are too few to allow any definite conclusions to be drawn. The two cases reported by Crenshaw serve to remind (1) that this complication does occur (2) that it should be thought of when a perinephric abscess is accompanied by cough, especially with the patient in the recumbent position, or by excessive sputum and elevation of the diaphragm and conversely, that it should

from the literature, can be expected to give 96 per cent accuracy. Hydatid mole, chorionepithelioma, teratoma testis and women post partum less than one week can be expected to give positive Aschheim-Zondek reactions. Early menopause, amenorrhea due to ovarian hypofunction, ovarian cysts with amenorrhea, acromegaly, females with genital carcinomas and rarely males with extragenital carcinoma sometimes give positive Aschheim-Zondek reactions. The Aschheim-Zondek test varies in tubal pregnancy. A positive reaction seems to indicate persistence of fetal life, while negative tests are probably due to fetal death before the urine is collected. In abortion, positive Aschheim-Zondek reports have been recorded up to eight weeks after the abortion. Here, as in tubal pregnancy, the test probably stays positive as long as living placental tissue stays in contact with maternal blood. In some instances the Aschheim-Zondek becomes positive from three to five days after the date of the expected menstruation. It is commonly positive two weeks after the missed period. The Friedman test is simpler than the original Aschheim-Zondek test, requiring only one intravenous injection into a rabbit. A conclusion can be reached with this test after thirty hours, or even twenty-four if necessary. The animal need not be killed and it is the author's practice to do a laparotomy. With this test Reinhardt and Scott had a positive observation twenty-one days after the known date of coitus, and after the patient had missed a period in the interim.

**The Diseased Gallbladder**—Johnson states that a diseased gallbladder can well be regarded as the most dangerous and common focus of infection in the abdomen, the more dangerous because sometimes "too silent." Closure without drainage or suture of the gallbladder fossa is most desirable. Unsatisfactory end-results are due in most cases to other disease conditions outside the gallbladder or cystic duct which would not have occurred, and often which cannot be corrected, had the gallbladder been removed earlier, and finally many incomplete cures can be charged to too frequent use of some form of drainage. Gallbladder disease does not always occur in the male or female who is fair, fat and forty. Treatment is of one kind only and in almost all cases immediate, i. e., cholecystectomy complete when possible and partial if gangrenous. Postoperative treatment consists of giving 1,000 cc. of 5 per cent dextrose in physiologic solution of sodium chloride subcutaneously. In the author's series of 113 the mortality was two, the ages ranged from 11 to 82 and the conditions were from the gangrenous ruptured gallbladder to the usual chronic inflammation.

### New Orleans Medical and Surgical Journal

85 227 300 (Oct.) 1932

- Sterility in Women Including Its Surgical Aspects. M. A. Dabney and Eugene B. Dabney. Birmingham Ala.—p. 227.  
Induction of Labor with Castor Oil Quinine and Puncture of Membranes. T. B. Avo. New Orleans.—p. 235.  
Place of Dextrose Phlebotomy in Surgery. R. A. Cutting. New Orleans.—p. 246.  
A Few Critical Remarks on 'Why's and Wherefores' of Bad Results in Fractures of Long Bones. A. C. King. New Orleans.—p. 249.  
Headaches: Causes and Treatment. A. Fustis. New Orleans.—p. 253.  
Some Deductions from Physical Examination of One Thousand Eight Hundred and Fifty Individuals. O. W. Bethea and W. R. Hardy. New Orleans.—p. 259.  
Asthma in Children from Point of View of Pediatrician and General Practitioner. E. C. Mitchell. Memphis Tenn.—p. 262.  
Indiscriminate Myringotomy. J. P. Brown. Monroe La.—p. 268.

**Headaches**—Eustis presents a classification of headaches based on regional anatomy rather than on the associated disease. Headaches are complained of by 49 per cent of routine office patients in a general diagnostic practice. Headaches are as frequent in men as in women. Eighty-six per cent of the patients complaining of headaches have an associated intestinal toxemia. A plea is made to abandon the term *migraine* as a clinical entity substituting the term *undiagnosed*. Treatment consists in determining the cause of the headache and its removal which often cannot be decided on until a careful history is taken and a thorough diagnostic study made. The physician who makes a diagnosis of headache without effort to know the cause and offers relief is unjustifiably shirking a tedious problem.

**Asthma in Children**—According to Mitchell allergy plays an important part in the pathogenesis of children's asthma. The hereditary factor of asthma is a very neglected in the diagnosis because

a proper history is not taken. Asthma is not the only manifestation of allergy in children. Eczema, urticaria, intestinal symptoms, often difficult feeding cases, may be the manifestation. The scratch and intradermal tests are of value as diagnostic aids, but they should not alone determine the diagnosis. Many allergic persons go through life without symptoms because they never receive a threshold dose of the allergin. Much can be accomplished by proper diagnosis. Accurately diagnosed cases are improved by avoiding the offending allergin or by raising resistance to this allergin by vaccines or other procedures. Every practitioner should understand at least the principles of allergy. Asthma, particularly, and all other allergic manifestations in the child should never be considered entirely cured. There may be a remission of symptoms for years and then a recurrence of the condition with increased intensity.

### Northwest Medicine, Seattle

31 457 502 (Oct.) 1932

- Circulation and Its Measurements. H. C. Bazett. Philadelphia.—p. 457.  
Food Tables for Use in Acid-Base Diets. Ira A. Manville and Ruth Winchell. Portland Ore.—p. 464.  
Electrocoagulation of Tonsils. Is It a Commendable and Worthwhile Procedure? F. B. Balmer, Chicago.—p. 470.  
A Few Tonsillectomy Hints. A. H. Norton, Eugene Ore.—p. 479.  
Resume of Recent Conclusions Regarding Liver Functions. H. J. Whitacre, Tacoma Wash.—p. 480.  
Outline of History of Medicine in Pacific Northwest. O. Larsell, Portland, Ore.—p. 483.

**Food Tables**—Manville and Winchell present food tables giving the excess acid or base of foods. They state that foods may be classed into three main groups: excess acid-ash foods, consisting of meat, fish and cereals, some nuts, such as walnuts and peanuts, and some fruits, such as plums, prunes and cranberries; excess alkaline-ash foods, consisting of most fruits, most vegetables, milk and some nuts, such as almonds, and neutral food, consisting of butter, cornstarch, cream and, in general, most cooking fats and oils, and pure carbohydrates, such as sugar and tapioca. Those foods having the lowest buffer values are the cereals, those of intermediate value are the fruits and vegetables, while those having the highest values are the flesh foods. Notice should also be taken of the fact that cooking reduces the buffer value to as much as one third of its raw value. The use of the acid-base foods will generally lie in those dietotherapeutic regimens in which dehydration is desired, as, for example, in epilepsy, nephritis with edema and obesity. Buffer value foods are useful in the dietary care of persons suffering from an excess or from a deficiency of hydrochloric acid in the stomach. They are also of value in the supervision of the dietaries of young children whose gastric acidity has not yet reached that of the adult.

**Electrocoagulation of Tonsils**—According to Balmer, the control of tonsillar bleeding in accordance with the basic principles of general surgery is essential in the removal of tonsils. Faulty operative position and lack of a definite precise technic are greatly responsible for the majority of unsatisfactory postoperative results in tonsillectomy. The author's technic is as follows: The tonsil is swabbed with a 1:1,000 epinephrine solution. The surface of the tonsil and the interior of the crypts are swabbed with a small amount of cocaine hydrochloride flake by means of a fine applicator tipped with cotton and moistened with a 1:6,000 epinephrine solution and the excess of moisture squeezed out. This is repeated two or three times at two or three minute intervals. The electrocoagulation apparatus is employed the meter reading about 3,000 milliamperes with the spark gaps slightly open. This will give a reading of from 250 to 300 milliamperes with the patient in the circuit. The indifferent electrode is connected to the metal chair on which the patient is seated. The proper needle is inserted into the tonsil substance approximately 4 mm; it should be kept about 4 or 5 mm away from the peripheral structures. Sparking and surface fulguration should be avoided and the point should be directed toward the center of the fossa. In from one to three seconds a blanched area will appear around the needle. This process is repeated as many times as is necessary usually from six to ten contacts. A small area of unblanched tissue which is left between the punctures, allows the coagulated areas to coalesce and prevents overcoagulation and the possibility of too early separation of the coagulum. Bleeding points may be controlled by sparking the area

be considered when pulmonary symptoms are accompanied by or preceded by observations suggestive of renal disease, and (3) that early diagnosis and early drainage of the perinephric abscess would greatly reduce the pulmonary injury

**Value of Serial Pyelograph in Diagnosis**—According to Moore, pveloscopy, in combination with serial pyelography, represents the best means of obtaining an accurate estimation roentgenologically of the upper urinary tract. The serial pyelograph has the following advantages. It is an inexpensive device, interchangeable with the Bucky diaphragm tray and adaptable to most of the Bucky diaphragms now in use. A review of a series of 211 pyelograms indicated that by its use proper interpretation of pyelograms was greatly enhanced. Evidences of motility in the calices, pelvis and ureter are easily demonstrated. Constant filling defects from shadowless obstructions are more apparent and the identification of suggestive shadows is facilitated. With this method there is also evidence that the obstruction often noted on the passage of a bulb through the ureter, and the "hang" felt on its withdrawal, are frequently caused by local spasm, rather than by stricture, of the ureter.

### Minnesota Medicine, St. Paul

15 647 728 (Oct.) 1932

- Hospital and Medical Care of Veterans from Point of View of the Doctor M. Fishbein, Chicago—p. 647  
The Community Hospital and the Hospitalization of Veterans E. A. Fitzpatrick, Milwaukee—p. 650  
Fractures in and About Neck of Femur W. C. Campbell, Memphis, Tenn.—p. 654  
Davis Method of Prostatic Resection T. M. Davis, Charlotte, N. C.—p. 666  
Results of Resection of Prostate Gland H. C. Bumpus, Jr., Rochester—p. 671  
Quantitative Study of Vibration Sense in Normal and Pernicious Anemia Cases R. C. Gray, Minneapolis—p. 674  
Present Status of Scarlet Fever Prevention and Serum Treatment E. S. Platou, Minneapolis—p. 697  
Diagnosis and Treatment of Infections of Urinary Tract in Childhood H. F. Helmholtz, Rochester—p. 703  
Simplified Infant Feeding O. W. Rowe, Duluth—p. 707

### Missouri State Medical Assn. Journal, St. Louis

29 497 550 (Nov.) 1932

- Diagnosis of Cerebellar Disease B. L. Elliott, Kansas City—p. 497  
\*Hormone Control of Changes in Endometrium During Menstrual Cycle E. Allen, Columbia—p. 502  
\*Nephritis in Pregnancy E. J. Stieglitz, Chicago—p. 505  
Colostomy W. R. Rainey, St. Louis—p. 513  
Foci of Attack in Prevention of Blindness in Missouri H. D. Lamb, St. Louis—p. 518  
Spinal Anesthesia O. P. Hampton, Jr., St. Louis—p. 520  
\*Acute Pharyngeal Infection: Management and Factors Involved J. B. Costen, St. Louis—p. 525  
Indications for Cesarean Section W. C. Gayler, St. Louis—p. 529  
Routine Basal Metabolism: Value in Examination of Patients A. L. Anderson, Springfield—p. 531  
Tularemia: Result of Treatment: Two Cases A. van Ravenswaay, Boonville—p. 533

**Hormone Control of Changes in Endometrium.**—From his previously reported animal experiments and those of other authors, the following conclusions are drawn by Allen: 1. The follicular hormone, theelin, is responsible for the waves of growth which run through the accessory genital organs, especially the endometrium of the uterus of primates. 2. After this hyperplastic condition has been induced, a discontinuance or decrease in the amount of theelin is followed by the onset of an experimental menstruation. 3. Unless the theelin treatment is followed by treatment with the corpus luteum hormone or progestin, the hemorrhage occurs from an interval type of endometrium. 4. The histologic changes that precede the actual onset of hemorrhage are similar in their essential characteristics to those of normal menstruation. The author usually removed one mammary gland after double ovariectomy and before injections were begun to serve as a control. The other mammary gland removed at the end of the period of injections showed a great deal of growth both in the epithelium covering the nipples and in the ducts and alveoli of the glandular tree. To obtain full development of the alveoli of the mammary glands, however, it is necessary to follow injections of theelin with injections of progestin. A third ovarian hormone, also from the corpus luteum, has been demonstrated to have a specific action in the guinea-pig. Its effect is to induce relaxation in the pelvic ligaments to enlarge the birth canal at parturition. Theelin actually causes the resorption of the symphysis pubis, leaving the pelvic girdle open in front and thus enlarging the

birth canal. Since menstruation occurs in experimental animals only following removal or decrease in the amount of theelin, it seems logical that the continual presence of this hormone in the circulation during pregnancy may partly account for the absence of menstruation during pregnancy.

**Nephritis in Pregnancy.**—Stieglitz states that nephritis in pregnancy is a frequent and serious clinical problem. Pregnancy predisposes to renal injury because of the greatly augmented burden of renal work and because of the specific intoxication attributable, in some manner as yet unexplained, to pregnancy. Certain clinical phenomena occurring in nephritis, such as edema, arterial hypertension and cerebral symptoms, must be attributed to the generalized tissue intoxication rather than to renal inadequacy. The significance of this generalized tissue intoxication must always be before one in determining the methods of therapeutic attack. Nephritis in pregnancy is divisible into four major types, clinically and etiologically distinct: the syndrome of renal fatigue in pregnancy or the nephrosis of pregnancy, eclampsia or preeclamptic intoxication, preexistent nephritis exacerbated by pregnancy, and coincident nephritis. These four forms constitute distinct clinical entities, with characteristic clinical pictures, prognoses and therapeutic problems. The theory of nephritis, as the curative therapy of any disease, depends on three cardinal principles of attack: (1) eradication or at least amelioration of the etiologic factors responsible for the disease (etiologic therapy), (2) reduction of the physiologic burden of the injured structures, and (3) enhancement of the efficiency of tissue respiration and nutrition.

**Acute Pharyngeal Infection.**—According to Costen, the activity of most acute pharyngeal infections depends on general systemic change. Fluid intake is restricted or prevented by the pain of swallowing and must be maintained by other routes. Intravenous, subcutaneous or suprapubic routes must be utilized for fluid support. Pharyngeal tissue, not showing resistance to the infection by firm cellular reaction, should cause prompt investigation as to leukocyte change, and a Wassermann test should be done. The efficiency of hot hypertonic solution depends on the direct effect of the salt on the mucosa with removal of tissue fluid, and by producing hyperemia more oxygen is supplied to the tissues, which retards the development of edema. Diphtheria and pneumococcus infection, with membranes, do not seem to be affected by irrigation treatment. Treatment of diphtheritic infection of the pharynx depends entirely on the well known early use of antitoxin. Most cases of membranous infection of the pharynx with pneumococcus types I and II respond to the use of intravenous or subcutaneous serum, 10,000 units of each is given as a combined dose twice a day and continued for from two to three days only. Tolerance to this treatment is carefully watched after the first dose. When acute pharyngeal infection has progressed to involvement of the deep cervical planes, the course of safety lies in external drainage, with liberal access to the submaxillary and carotid sheath spaces.

### Nebraska State Medical Journal, Lincoln

17 413-464 (Oct.) 1932

- Symposium of Modern Views on Toxemias of Pregnancy: Pernicious Vomiting E. C. Sage, Omaha—p. 413  
Id. Nephritis in Pregnancy C. W. Moon, Omaha—p. 417  
Id. Preeclampsia and Eclampsia L. S. McGooagan, Omaha—p. 419  
Id. Presumable Toxemias L. O. Hoffman, Omaha—p. 422  
Disease of Thyroid Gland B. B. Davis, Omaha—p. 425  
Efficiency in Medical Practice F. W. Heagy, Omaha—p. 431  
Introspection of the Profession C. Andrews, Lincoln—p. 434  
Modern Point of View of Traumatic Epilepsy K. S. J. Hohlen, Lincoln—p. 436  
Present Status of Botulism in Food Poisoning C. M. Swab and H. F. Gerald, Omaha—p. 438  
Surgical Procedures on Sympathetic Nervous System in Treatment of Peripheral Vascular Diseases W. D. Abbott, Des Moines, Iowa—p. 443  
\*Accuracy of Biologic Tests for Pregnancy B. C. Russum, Omaha—p. 446  
Myocardial Versus Valvular Defects G. W. Covey, Lincoln—p. 448  
\*The Diseased Gallbladder E. G. Johnson, Grand Island—p. 450  
Drug Idiosyncrasy Due to Phenyl Group E. S. Maloney, Omaha—p. 452  
Massive Doses of Antitetanic Serum: Case Report L. Stark, Norfolk—p. 452

**Accuracy of Biologic Tests for Pregnancy.**—According to Russum, the Aschheim-Zondek, female sex hormone and Siddall test for pregnancy give high degrees of accuracy. The Aschheim-Zondek test, in his experience and the larger series



Electrosurgery, and electrocoagulation in particular, do not replace surgery in the removal of tonsils. They are better suited to selected cases. The combination of surgery and electrosurgery is the ideal method. Surgery will continue to be the method of choice, when it is contraindicated, electrosurgery may be considered as an appropriate and scientific aid to ordinary surgery. The surgeon should not be limited by lack of ability, knowledge, equipment or prejudice. There are many contraindications to electrocoagulation. Diathermocoagulation, or removal of the cryptic portion of the tonsil, is a commendable, worth-while procedure to be considered under circumstances in which a more conservative procedure is required. Electrocoagulation is a safe, ultraconservative procedure, requiring time, judgment, technical skill, patience and meticulous care.

### Public Health Reports, Washington, D. C.

17 2137 2158 (Nov. 4) 1932

Observations on Experimental Meningitis in Rabbits S. E. Branham and R. D. Lillie—p. 2137

17 2159 2189 (Nov. 11) 1932

Excess Mortality from Causes Other than Influenza and Pneumonia During Influenza Epidemics S. D. Collins—pp. 2159

### Radiology, St. Paul

19 269 336 (Nov.) 1932

Roentgen Diagnosis of Diseases and Abnormalities of Colon J. L. Kantor, New York—p. 269

Roentgen Findings in Allergic Individuals C. H. Heacock, Memphis, Tenn.—p. 282

Progress in Radiology During 1931 The Thorax W. W. Wasson, Denver—p. 290

Hepatolienography with Use of Thorotrast C. H. Warfield, Chicago—p. 311

### Western J. Surg., Obst. & Gynecology, Portland, Ore.

40 523 580 (Oct.) 1932

Past and Possible Future of Diseases of Thyroid Gland C. H. Mayo, Rochester, Minn.—p. 523

Progressive Exophthalmos After Thyroidectomy H. C. Naffziger, San Francisco—p. 530

\*Iodine Resistant Hyperthyroidism E. B. Potter and W. R. Morris, Ann Arbor, Mich.—p. 544

Value of Basal Metabolic Rate Estimations to General Practitioner W. J. Deadman and A. M. Graham, Hamilton, Ont., Canada—p. 553

\*Hydrocephalus: Diagnosis, Treatment and Pathologic Change in Two Unusual Cases W. M. Craig, Rochester, Minn.—p. 562

Lateral Aberrant Thyroid: Report of Case I. J. Vidgoff, Los Angeles—p. 566

\*Alkalosis Uremia Syndrome T. G. Orr and M. J. Rumold, Kansas City, Kan.—p. 569

Repair of Hernias with Fascial Sutures K. E. Smiley, Los Angeles—p. 573

**Iodine-Resistant Hyperthyroidism**—The comparison of data in 267 exophthalmic goiters having the usual response to iodine and those resistant to iodine and the data in 273 toxic adenomas showing the incidence of iodine refractoriness and a comparison of this group with all adenomas studied led Potter and Morris to the conclusion that the prolonged use of iodine appears to be responsible for the production of an iodine-resistant state in 40 per cent of the cases which show this reaction. In 60 per cent of patients refractory to iodine, the only known source of iodine previous to hospitalization is iodized salt. Although occasional individuals may become refractory to iodine from the ingestion of iodized salt, the proved benefit from its use in the control of endemic goiter justifies the continuance of its use in goitrous regions. Some unrecognized factors, other than the activity of the thyroid, are possibly concerned in the production of the iodine-resistant state. Fractional operations provide the safest method for the removal of the iodine-resistant thyroid.

**Hydrocephalus**—Two cases of infantile hydrocephalus with unusual pathologic observations are presented by Craig because of congenital anomalies and one objective observation common to the two, namely, asymmetry in the enlargement of the head. The neurologic examination in both cases was objectively negative and all functions were apparently normal. Both patients presented the clinical picture of idiopathic hydrocephalus, with the exception that on close observation an asymmetrical enlargement of the right side of the head was noted. The surgical problem in the treatment of hydrocephalus is relieving the obstruction, draining the superabundance of cerebrospinal fluid, or reducing its secretion.

**Alkalosis Uremia Syndrome**—Orr and Rumold present the case history of a patient which illustrates the relationship between alkalosis and kidney disease. The authors believe that in well developed alkalosis there exists definite kidney damage, as shown by albumin, casts, pus and red blood cells in the urine and reduced kidney function. Because of the importance of disturbed chemical balance of the body in diseases involving the gastro-intestinal tract, a chemical study of the blood is imperative for accurate diagnosis and as a guide to rational therapy. It is suggested that the cause of the kidney damage may be excessive dehydration. The symptoms of alkalosis may be relieved by the administration of sufficient sodium chloride and water to replace these elements lost by vomiting.

### Wisconsin Medical Journal, Madison

31 670 743 (Oct.) 1932

Quo Vadis O Physician of Wisconsin? R. H. Jackson, Madison—p. 677

Fractures of Ankle M. S. Henderson, Rochester, Minn.—p. 684

\*Arthritis of Spine, with Reference to Industrial Accidents A. J. Weber, Milwaukee—p. 691

\*Mixed Tumors of Parotid Gland: Study of Fifteen Cases A. S. Jackson, Madison—p. 696

\*Embolism and Thrombosis of Superior and Inferior Mesenteric Vessels: Report of Cases R. L. MacCornack, Whitehall—p. 702

**Arthritis of Spine**—On the basis of a careful analysis of 100 cases, Weber states that chronic hypertrophic arthritis of the spine is usually found in the laboring class and past the age of 40, is more commonly found in men than in women, and is usually found without symptoms until some injury becomes engrafted on it and precipitates disability. It may be found in any part of the spinal column but is most common in the lower dorsal and lumbar region. This is probably due to an anatomic basis. Trauma may aggravate an existing hypertrophic arthritis or may cause an insufficiency of the musculature and thereby cause disability. The author emphasizes the necessity of a careful study of each case, not only by physical examination but by roentgenologic examination as well, in order to determine the condition that was old and had existed at the time of the injury and that which has been caused by trauma. In this way one can determine to a reasonable certainty what a man's disability should be and what part of this disability is directly the result of injury.

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**Mesenteric Vessels**—MacCornack states that, when considering the cause of acute abdominal pain, embolism and thrombosis of the mesenteric vessels should be borne in mind. The lesion occurs more often than is generally supposed, the author observed three cases in the past eight years, two involving the superior mesenteric vessels, and the other, an unusual case, affecting the inferior mesenteric vessels with recovery. Embolism and thrombosis of the mesenteric vessels may be expected in association with infective or degenerative heart disease, arteriosclerosis, appendicitis, hepatic cirrhosis, enteritis, colitis, trauma, and following recent abdominal operation. The symptoms resemble those of acute intestinal obstruction. The diagnostic features are acute abdominal pain, nausea and vomiting, often with blood in the vomitus, early diarrhea followed by obstipation, melena, and shock. The treatment calls for prompt surgical intervention with wide resection of the involved bowel and mesentery. The intestine is best brought together by end-to-end anastomosis. Early operation prevents spread of thrombosis and peritonitis.

Electrosurgery, and electrocoagulation in particular, do not replace surgery in the removal of tonsils. They are better suited to selected cases. The combination of surgery and electrosurgery is the ideal method. Surgery will continue to be the method of choice, when it is contraindicated, electrosurgery may be considered as an appropriate and scientific aid to ordinary surgery. The surgeon should not be limited by lack of ability, knowledge, equipment or prejudice. There are many contraindications to electrocoagulation. Diathermocoagulation, or removal of the cryptic portion of the tonsil, is a commendable, worth-while procedure to be considered under circumstances in which a more conservative procedure is required. Electrocoagulation is a safe, ultraconservative procedure, requiring time, judgment, technical skill, patience and meticulous care.

### Public Health Reports, Washington, D. C.

47 2137 2158 (Nov. 4) 1932

Observations on Experimental Meningitis in Rabbits S. E. Branham and R. D. Lillie—p. 2137

47 2159 2189 (Nov. 11) 1932

Excess Mortality from Causes Other than Influenza and Pneumonia During Influenza Epidemics S. D. Collins—pp. 2159

### Radiology, St. Paul

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Roentgen Diagnosis of Diseases and Abnormalities of Colon J. L. Kantor, New York—p. 269

Roentgen Findings in Allergic Individuals C. H. Heacock, Memphis, Tenn.—p. 282

Progress in Radiology During 1931 The Thorax W. W. Wasson, Denver—p. 290

Hepatoenterography with Use of Thorotrast C. H. Warfield, Chicago—p. 311

### Western J. Surg., Obst. & Gynecology, Portland, Ore.

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Past and Possible Future of Diseases of Thyroid Gland C. H. Mayo, Rochester, Minn.—p. 523

Progressive Exophthalmos After Thyroidectomy H. C. Naffziger, San Francisco—p. 530

\*Iodine Resistant Hyperthyroidism E. B. Potter and W. R. Morris, Ann Arbor, Mich.—p. 544

Value of Basal Metabolic Rate Estimations to General Practitioner W. J. Deadman and A. M. Graham, Hamilton, Ont., Canada—p. 553

\*Hydrocephalus: Diagnosis, Treatment and Pathologic Change in Two Unusual Cases W. M. Craig, Rochester, Minn.—p. 562

Lateral Aberrant Thyroid: Report of Case I. J. Vidgoff, Los Angeles—p. 566

\*Alkalosis Uremia Syndrome T. G. Orr and M. J. Rumold, Kansas City, Kan.—p. 569

Repair of Hernias with Fascial Sutures K. E. Smiley, Los Angeles—p. 573

**Iodine-Resistant Hyperthyroidism**—The comparison of data in 267 exophthalmic goiters having the usual response to iodine and those resistant to iodine and the data in 273 toxic adenomas showing the incidence of iodine refractoriness and a comparison of this group with all adenomas studied led Potter and Morris to the conclusion that the prolonged use of iodine appears to be responsible for the production of an iodine-resistant state in 40 per cent of the cases which show this reaction. In 60 per cent of patients refractory to iodine, the only known source of iodine previous to hospitalization is iodized salt. Although occasional individuals may become refractory to iodine from the ingestion of iodized salt, the proved benefit from its use in the control of endemic goiter justifies the continuance of its use in goitrous regions. Some unrecognized factors, other than the activity of the thyroid, are possibly concerned in the production of the iodine-resistant state. Fractional operations provide the safest method for the removal of the iodine-resistant thyroid.

**Hydrocephalus**—Two cases of infantile hydrocephalus with unusual pathologic observations are presented by Craig because of congenital anomalies and one objective observation common to the two, namely, asymmetry in the enlargement of the head. The neurologic examination in both cases was objectively negative and all functions were apparently normal. Both patients presented the clinical picture of idiopathic hydrocephalus, with the exception that on close observation an asymmetrical enlargement of the right side of the head was noted. The surgical problem in the treatment of hydrocephalus is relieving the obstruction draining the superabundance of cerebrospinal fluid, or reducing its secretion.

**Alkalosis Uremia Syndrome**—Orr and Rumold present the case history of a patient which illustrates the relationship between alkalosis and kidney disease. The authors believe that in well developed alkalosis there exists definite kidney damage, as shown by albumin, casts, pus and red blood cells in the urine and reduced kidney function. Because of the importance of disturbed chemical balance of the body in diseases involving the gastro-intestinal tract, a chemical study of the blood is imperative for accurate diagnosis and as a guide to rational therapy. It is suggested that the cause of the kidney damage may be excessive dehydration. The symptoms of alkalosis may be relieved by the administration of sufficient sodium chloride and water to replace these elements lost by vomiting.

### Wisconsin Medical Journal, Madison

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Quo Vadis O Physician of Wisconsin? R. H. Jackson, Madison—p. 677

Fractures of Ankle M. S. Henderson, Rochester, Minn.—p. 684

\*Arthritis of Spine, with Reference to Industrial Accidents A. J. Weber, Milwaukee—p. 691

\*Mixed Tumors of Parotid Gland: Study of Fifteen Cases A. S. Jackson, Madison—p. 696

\*Embolism and Thrombosis of Superior and Inferior Mesenteric Vessels: Report of Cases R. L. MacCornack, Whitehall—p. 702

**Arthritis of Spine**—On the basis of a careful analysis of 100 cases, Weber states that chronic hypertrophic arthritis of the spine is usually found in the laboring class and past the age of 40, is more commonly found in men than in women, and is usually found without symptoms until some injury becomes engrafted on it and precipitates disability. It may be found in any part of the spinal column but is most common in the lower dorsal and lumbar region. This is probably due to an anatomic basis. Trauma may aggravate an existing hypertrophic arthritis or may cause an insufficiency of the musculature and thereby cause disability. The author emphasizes the necessity of a careful study of each case, not only by physical examination but by roentgenologic examination as well, in order to determine the condition that was old and had existed at the time of the injury and that which has been caused by trauma. In this way one can determine to a reasonable certainty what a man's disability should be and what part of this disability is directly the result of injury.

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**Plasmochin and Quinine in Treatment of Malaria**—Jarvis observed that in the treatment of chronic benign malaria the combination dosage of 0.03 Gm of plasmochin and 1.3 Gm of quinine daily for twenty-one days gives results as good as (if not better than) a dose of 0.04 Gm of plasmochin daily with 1.3 Gm of quinine over the same period of time, and seldom gives rise to toxic symptoms which, when they do occur, are comparatively mild. It would appear that equally good results as to cure are obtainable by the exhibition of 0.02 Gm of plasmochin daily for twenty-one days, or 0.03 Gm daily for fourteen days, in each case with 1.3 Gm of quinine, as have been obtained with 0.03 Gm of plasmochin and 1.3 Gm of quinine daily for twenty-one days. The risks of toxic effects in either case are considerably reduced. A dosage of 0.02 Gm of plasmochin in combination with 1.3 Gm of quinine daily for fourteen days can be given to young British soldiers who are taking a moderate amount of exercise (work and games), without any fear of toxic manifestations.

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2 929 982 (Oct. 29) 1932

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Activation of Insulin. H. P. Himsworth—p. 935.  
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Thrombophlebitis Migrans. N. Kletz—p. 938.  
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**Modification of Barberio's Test**—Harrison believes that many disadvantages of Barberio's test are overcome by his modification of it, which is as follows. The seminal stain is extracted with trichloroacetic acid, which removes spermine and other substances but leaves behind the proteins, the cleared extract is precipitated with trinitrophenol and the crude spermine picrate is crystallized under conditions determined by experiment. A portion of the cloth about 1 by 1 cm. is cut out from the stain and pushed to the bottom of a tapered centrifuge tube, 1 cc. of a 25 per cent solution of trichloroacetic acid is added, and the tube is shaken at intervals. After standing for about one hour the tube is centrifuged, and the supernatant fluid is decanted. An equal volume of a saturated aqueous solution of trinitrophenol is added and a precipitate forms if spermine is present. The mixture is placed in a boiling water bath for a few minutes till solution is complete, and the tube is left to cool slowly in the bath. When cool, the contents of the tube are centrifuged if necessary, and the precipitate is examined under the microscope. If crystals are observed the reaction is positive, but amorphous particles are of no significance. If a relatively copious precipitate is

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**Diagnosis of Acute Abdominal Malaria**—During five years' hospital surgical practice in the Caribbean littoral (Colombia, Panama and Guatemala), Taylor has kept records of all cases of malaria or suspected malaria in which vomiting or other acute abdominal symptoms were prominent. In examining his records, he found that they total only twenty-five cases, compiled in regions where the malaria morbidity is enormous and the malaria death rate probably as high as that in any part of the world. Of these cases, sixteen yielded positive smears for malaria parasites in the peripheral blood, six gave negative smears but have been classified as cases of malaria because of response to quinine and other indications, and three were diagnosed as malaria on admission but proved to be acute surgical cases. In addition to these three, of the sixteen patients with positive smears, one had an acute surgical lesion. The author states that the great majority of sufferers from tropical malaria with acute abdominal symptoms in his study were infected with estivo-autumnal parasites (93 per cent). Of this number 85 per cent gave positive tests for occult blood in the vomitus or gastric contents. The finding of occult blood was of considerable value in establishing the diagnosis of abdominal malaria. The distinction of acute abdominal malaria from acute surgical lesions of the abdomen rests principally on physical signs, of which the most important is absence of rigidity in malaria.

### American Journal of Ophthalmology, St. Louis

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- Roentgen Ray Diagnosis of Double Perforation of Eyeball After Injection of Air into Space of Tenon. E. W. Spackman, Philadelphia —p. 1007
- Hyperphoria and Prolonged Occlusion Test. C. Beisbarth, St. Louis —p. 1013
- Ocular Papillomas. W. B. Doherty, New York —p. 1016
- Intra Ocular Foreign Body with Bacillus Welchii Infection. E. M. Berry, Brooklyn —p. 1022
- Visual Fields Blind Spots, and Optic Disks in Endocrine Diseases. L. L. Meyer and H. R. Rony, Chicago —p. 1024
- Contact Glasses in Keratoconus and in Ametropia. Cases. Olga Sitchevska, New York —p. 1028
- Effect of Roentgen Ray and Radium Radiations on Crystalline Lens. C. A. Clapp, Baltimore —p. 1039
- Frequency of Various Kinds of Refractive Errors. I. S. Tassman, Philadelphia —p. 1044

### American Review of Tuberculosis, New York

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- \*Surgery of Tuberculosis of Pylorus. Review of Literature. Report of Case. Experimental Data. F. C. Lee —p. 323
- Virulence of Attenuated Strain of Tubercle Bacillus R1 After Serial Passage Through Previously Tuberculin Negative Guinea Pigs. D. E. Cummings —p. 369
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**Surgery of Tuberculosis of Pylorus**—Lee presents twenty-six cases (other than those reviewed by Lusena) of tuberculosis of the pylorus abstracted from the literature and adds a personally observed case. From a study of these cases the author concludes that the condition is most common in persons between the ages of 20 and 40 years and affects males more than females. Pathologically the condition is primarily

in the submucosa, with extension to the mucosa and the formation of ulcers. The process may be acute or chronic, in the latter form it is difficult of differentiation from carcinoma. The diagnosis is difficult because there are no pathognomonic signs. An illness extending over a period of a year or more, accompanied by signs of pyloric obstruction, diarrhea, fever and tuberculosis elsewhere, is highly significant. Biopsy of a supraclavicular lymph node may aid materially in making the diagnosis. In the differential diagnosis, carcinoma of the pylorus, syphilis, gastric ulcer, carcinoma of the biliary tract and the head of the pancreas, metastatic carcinomatous lymph nodes at the pylorus and benign tumors of the stomach should be taken into consideration. The treatment was surgical. The successful operative measures were a gastro-enterostomy and a resection. The resection gave the higher percentage of statistical cures, chiefly because the process was chronic and the tumor considered to be cancer. The true diagnosis was not made until the routine sections were seen. The lower percentage of gastro-enterostomy was due to the fact that this operation was frequently done for palliative reasons only. The operation of choice is a resection for chronic cases and a gastro-enterostomy for more acute ones. The prognosis is bad. The author attempted to produce this condition in dogs by injecting tubercle bacilli into the pyloric region. The acute inflammatory process which appeared in the stomach wall was soon transformed to the neighboring lymph nodes, leaving the original site of inoculation with only a few signs of a chronic inflammation.

### Pulmonary Atelectasis and Simulating Conditions

According to Dubrow, the roentgen shadow generally associated with pulmonary atelectasis, a homogeneous dense shadow, obliterating the parenchymal lung markings and associated with a retraction of the heart and trachea to the same side, combined with an elevation of the homolateral dome of the diaphragm, is not necessarily pathognomonic for this condition. Croupous pneumonia of one entire lung may cast a shadow similar to that of atelectasis. Other conditions, such as unilateral pulmonary tuberculosis with a tendency to fibrosis and pleural thickening, may simulate the roentgen appearance of pulmonary atelectasis. When the mediastinum is fixed, a unilateral pleural effusion may cast a shadow resembling that associated with atelectasis. Certain therapeutic procedures, for instance the use of aromatized oil in oleothorax, tend to produce thickening of the pleura and stiffening of the mediastinum, and cast a shadow similar to pulmonary atelectasis. In doubtful cases, when the roentgenogram has an appearance suggestive of pulmonary atelectasis, pleural puncture may prove valuable in differential diagnosis, yielding fluid in cases of effusion, high manometric readings with atelectasis, and no readings at all in cases presenting a thickened pleura.

**Massive Atelectasis**—Sokol considers an acute or subacute febrile complication, produced by the obstruction of a bronchus and followed by a more or less complete absorption of vesicular air in the corresponding portion of the lung, thus giving to the organ a structure resembling fetal lung, applicable to all types of massive atelectasis. It is characterized by the clinical symptoms of unilateral pulmonary consolidation, with displacement of the mediastinum and its contents toward the affected side. The etiologic causes of massive atelectasis may be intrabronchial, extrabronchial and idiopathic. The author reports two cases: one extrabronchial, caused by a fibrous strand, and the other intrabronchial plugging, caused by a blood clot or cast. The main conditions from which atelectasis must be differentiated are pneumonia, spontaneous collapse and pleurisy with effusion, as well as acute dilatation of the heart, infarction, diaphragmatic hernia, pulmonary embolus and thrombosis. From the standpoint of symptomatology, massive atelectasis and spontaneous pneumothorax are greatly similar but can be easily differentiated by physical observations and roentgen studies. A case complicated by artificial pneumothorax, especially in the early stages of the atelectasis, may be confusing. The roentgenograms in both cases reported by the author showed an extensive pneumothorax and, before the absorption of air from the alveoli was complete, resulted in displacement of the mediastinum toward the affected side, differential diagnosis was not possible without an accurate determination of the intrapleural pressure. Artificial pneumothorax has proved to be one of the main treatments of choice.

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**Chronic Obliterative Appendicitis**—Horsley and Warthen state that chronic obliterative appendicitis is the result of a chronic inflammatory process that tends to destroy the mucosa and obliterate the lumen of the appendix. It may last for many years. It may exist in any stage from involvement of a small portion at the tip to complete obliteration of the entire lumen of the appendix. It may be found at any age from 5 years upward but is more frequent in the elderly. Acute appendicitis or even rupture of the appendix may occur in an appendix that has been partially obliterated. The authors report a small series of thirteen cases in which there was complete obliterative appendicitis and in which the operation was solely for appendicitis; there were definite symptoms before operation. Eight of these patients have been entirely relieved of their symptoms; three have been partially relieved and two were not relieved. Complete obliterative appendicitis may produce marked symptoms which may be relieved by removal of the appendix. While a complete obliterative appendicitis seems incapable of producing a serious peritonitis it may cause discomfort that can be relieved only by operation. An accurate diagnosis of chronic obliterative appendicitis is difficult until the abdomen is opened and right-sided lower abdominal pain should be carefully investigated before any such diagnosis is ventured. Ureteral lesions, a small hernia, ulcers in the terminal ileum or cecum, arthritis or lesions of the spine and disease of the sacro-iliac joint should be considered before assuming a clinical diagnosis of chronic obliterative appendicitis.

**Treatment of Appendicitis with Peritonitis**—On the basis of a study of 251 patients operated on for appendicitis at the University Hospital, Baltimore, since June 1930, Shipley and Bailey conclude that exclusive of strangulated hernia, peritonitis is the chief cause of intestinal obstruction. In the majority of instances it is not the peritonitis alone that causes the adhesions and bands leading to obstruction but the reaction of the peritoneum to the drains. Drainage material, especially

in the lower part of the abdomen often causes widespread adhesions between loops of intestine, mesentery, omentum, pelvic organs and abdominal wall. Drains are soon obstructed and do not drain any considerable portion of the peritoneum. Paralytic ileus seriously obscures the clinical picture when drains are left in the abdomen. Pelvic drains increase the incidence of postoperative retention of urine. Drained abdomens are more likely to develop troublesome, painful, or disabling late postoperative adhesions. Late intestinal obstruction is more likely to occur in drained than in undrained abdomens. None of these considerations should carry any weight if the risk to life is increased by closure without drainage. Evidence is accumulating that the introduction of drains into the abdomen in the treatment of early peritonitis may be dispensed with, without increase in the death rate.

**Tuberculosis of Thyroid**—In the course of a microscopic study of 20,758 thyroids removed surgically at the Mayo Clinic over a period of eleven years, tuberculosis was diagnosed in twenty-one, an incidence of approximately 0.1 per cent. Rankin and Graham tabulate separately 104 cases of surgically treated tuberculosis of the thyroid reported in the literature, and the twenty-one cases from the Mayo Clinic. The combined data reveal a marked predominance of women patients evenly distributed over the fourth and fifth decades. Although evidence of active tuberculosis was present in only six of 125 cases and suspected in five others, the prevailing opinion is that probably all cases are secondary to some disease process elsewhere in the body. Diagnosis prior to microscopic study of tissue removed at operation is extremely rare, only three such instances are recorded. It was impossible from a detailed study of their data in the twenty-one cases to determine criteria by which a clinical diagnosis could be made. The principal syndrome exhibited by their patients was that of hyperthyroidism, which was noted in fifteen cases, with an increased basal metabolic rate of plus 19 per cent or higher. The question of whether the hypertrophic gland is rendered more susceptible to invasion by the bacillus of tuberculosis or the infection stimulates the parenchyma to abnormal activity, and is thus indirectly responsible for the hyperthyroidism, could not be conclusively determined. They noted evidence of thyroid deficiency after thyroidectomy in only three of 115 cases. Diffuse miliary tuberculosis in which there were typical epithelioid tubercles and giant cells, was by far the most common observation; caseation was reported in about a fifth of the cases studied; abscess and evidences of marked sclerosis were less frequently noted. Tuberculosis occurred in an adenomatous goiter in fifty-one cases, in a hypertrophic parenchymatous gland in thirty-one cases and in a colloid gland in six cases. Convalescence after thyroidectomy in these cases was not different from that of cases of uncomplicated adenomatous or exophthalmic goiter and as in these, the same excellent prognosis can be given.

**Intravenous Injection of Sclerosing Substances**—Ochsner and Garside present a comparative study of the effects of twenty different sclerosing substances on the veins of twenty-seven dogs. In all 348 histologic examinations were made, extending from half an hour to eight weeks after the injection. The changes in the vein wall consisted of destructive, inflammatory and reparative changes. They observed endothelial destruction in 45.1 per cent of the veins. It was greatest in the veins examined on or before the fourth day. Regeneration of the endothelium occurred in a large number of instances between the fourth and sixth days. Other destructive changes in the endothelium were vacuolization and partial destruction of the endothelial cell. The inflammatory reaction consisted of edema (83.7 per cent), leukocytic infiltration (8.6 per cent) and dilatation of the vasa vasorum (88.2 per cent). The reparative changes consisted of muscle hypertrophy (70.7 per cent) and fibrosis of the vessel wall (50.5 per cent). Thrombi occurred in only 13.2 per cent of all veins of these, 67.4 per cent were fibrinous and 34.8 per cent were fibrous. Canalization of fibrous thrombi occurred in 94.4 per cent. A 40 per cent solution of sodium salicylate produced greatest injury to the vein wall and the largest number of thrombi. In combination, the results obtained in their experimental investigation with their clinical experience, the authors feel that, of the group of agents studied, invertose 75 per cent alone or combined with saccharose, 5 per cent, should be used for routine

This "patent medicine" was recently analyzed by the Council on Pharmacy and Chemistry of the American Medical Association,<sup>20</sup> and the amount prescribed for a day was found to contain the equivalent of 56 grains (3.6 Gm.) of potassium bromide. This preparation controlled the attacks, but evidently the bromide was showing its degenerative effects, because a year later the mother stated that the patient had become almost incorrigible, that he could not be controlled in his diet and habits, and that she and his father were greatly distressed because of the irregularities of his conduct. May 9, 1932, he returned for reexamination, reporting that his attacks of convulsions were becoming more frequent and more severe in spite of the fact that he was using a proprietary preparation of phenobarbital regularly. His fasting blood sugar and carbohydrate tolerance test are given in table 1.

This patient was placed on a low carbohydrate, high fat diet, approximating 100 Gm. of carbohydrate, 75 Gm. of protein and 210 Gm. of fat, in which is included one or two hour feedings between meals and until he retires at night. Since he has demonstrated that he is careless in carrying out his diet he was given 1½ grains (0.1 Gm.) of phenobarbital after breakfast and supper

TABLE 1—Fasting Blood Sugar and Carbohydrate Tolerance Test in Case 1

	Blood Sugar
Fasting	0.050 per cent
1 hour after 100 Gm. of dextrose	0.090 per cent
2 hours after 100 Gm. of dextrose	0.066 per cent
3 hours after 100 Gm. of dextrose	0.050 per cent
4 hours after 100 Gm. of dextrose	0.050 per cent
5 hours after 100 Gm. of dextrose	0.050 per cent

The blood sugar curve and fasting blood sugar readings show that this patient has severe hyperinsulinism. If his grand mal seizures are not controlled by diet, an exploratory operation will be advised. If an adenoma is found it will be removed, but, if not, the resection of a large part of the body and tail of the pancreas will be advised with the hope that the number of islet cells may be reduced to the point at which about the normal amount of insulin will be secreted.

CASE 2—History.—A white man, aged 26, a teacher who had received his master's degree in a well known American university, was in perfect health, except that he had recurring attacks of convulsions, at the time of the initial examination during December, 1931. The first attack took place at the breakfast table just as he sat down to eat. He was unconscious for a few minutes, but he went to school and taught his classes during the day. The second attack was in August,

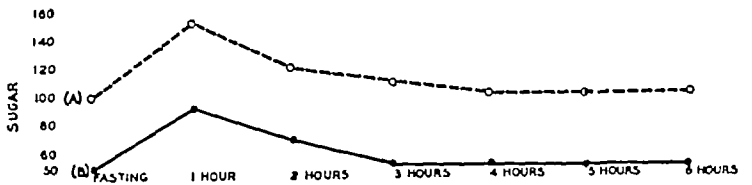


Chart 1 (case 1)—Epilepsy and hyperinsulinism. A, average normal blood sugar curve after dextrose tolerance test (100 Gm. of dextrose); B, low flat blood sugar curve in epileptic patient with hyperinsulinism. In the charts the sugar is given in milligrams per hundred cubic centimeters of blood.

between 11 and 12 o'clock at night. He fell while studying in his room. There were slight injuries to his head from striking a bookcase as he was falling. He bit his tongue. The third attack came on, October 1, about 11 p. m., four or five hours after he had eaten. The last attack was about December 15, about midnight, in his room. He fell out of his chair, while he was unconscious his toe was burned in an open grate.

The family history and previous illnesses were negative. Physical examination was negative. He was 5 feet 9 inches

(175 cm.) tall and weighed 181 pounds (82 Kg.). The Wassermann test of the blood was negative. The fasting blood sugar and carbohydrate tolerance test are shown in table 2.

It will be noted that the patient had a typical hyperinsulinism dextrose tolerance curve. Four hours after the ingestion of 100 Gm. of dextrose, when the blood sugar was 0.060 per

TABLE 2—Fasting Blood Sugar and Carbohydrate Tolerance Test in Case 2

	Blood Sugar
Fasting	0.065 per cent
1 hour after 100 Gm. of dextrose	0.112 per cent
2 hours after 100 Gm. of dextrose	0.080 per cent
3 hours after 100 Gm. of dextrose	0.065 per cent
4 hours after 100 Gm. of dextrose	0.060 per cent
5 hours after 100 Gm. of dextrose	0.060 per cent

cent, he became so weak that he had to go to bed. The laboratory technician gave him a cup of coffee, which relieved his weakness but did not affect his blood sugar, as at the last hour it was 0.060 per cent. One week later a second dextrose tolerance test was given, with practically the same results as the first (table 3).

Treatment and Course.—The patient was given no medicines but was placed on a low carbohydrate, moderate fat and normal protein diet, with orange juice on awakening in the morning, every two hours between meals and when awake at night. He has followed this diet only fairly well, with the result that he has had only two attacks in six months. His fasting blood sugar, June 23, 1932, was 0.065 per cent at 10 a. m., and at 2 p. m. (fasting) 0.060 per cent.

DO THE BROMIDES INHIBIT THE SECRETION OF INSULIN?

The rationale of the bromides in epilepsy is considered to be its effect as a motor depressant, thus preventing the convulsions, but an experience with our first epileptic case, in which hypoglycemia of assumed

TABLE 3—Results of Second Test in Case 2

	Blood Sugar
Fasting	0.065 per cent
1 hour after 100 Gm. of dextrose	0.110 per cent
2 hours after 100 Gm. of dextrose	0.080 per cent
3 hours after 100 Gm. of dextrose	0.068 per cent
4 hours after 100 Gm. of dextrose	0.060 per cent
5 hours after 100 Gm. of dextrose	0.060 per cent

pancreatic origin was found, made us think it possible that the bromides might have some effect in reducing the secretion of insulin, thus maintaining the blood sugar at a level above which hypoglycemic convulsions occur.

Since two dextrose tolerance tests had shown practically the same hyperinsulinism blood sugar curve in case 2, it was decided to see what effect the bromides would have on the hypoglycemia. At bedtime the night after his second dextrose tolerance test the patient was given 20 grains (1.3 Gm.) of strontium bromide, and the following morning at 7 o'clock, one hour before the fasting blood sugar was taken, he was given a second dose of the same amount, and at 10 a. m. he was given the third dose. The blood sugar readings throughout the test after the bromides were taken were from 5 to 20 mg. per hundred cubic centimeters of blood higher than after the two former tests. The blood sugar readings after the bromides had been taken are given in table 4.

One such test does not prove that the bromides will raise the blood sugar level in all epileptic patients who have hyperinsulinism, but it is suggestive. The bromides are said to reduce the secretion of hydrochloric acid in the stomach so that it seems reasonable to assume that it might affect the secretion of insulin by the islet cells of the pancreas. Of course, if the

blood sugar concentration can be maintained by diet at a level above the point at which convulsions occur, it is much better than giving the bromides, which seem to affect the secretion not only of the pancreas but of other organs and has a decidedly deteriorating effect on the mind. The bromides may be useful temporarily by epileptic patients with hyperinsulinism who cannot, or will not, carry out dietary instructions, but the bromism that follows the use of bromides, when used over a long period of time, may be more harmful to the epileptic patient than the convulsions.

**CASE 3—History**—A white youth, aged 18, a high school student, examined April 18, 1932, had for the past nine years had periodic attacks of what he called headaches, which he described as follows: "Everything blurs before my eyes, and I feel weak, drowsy and hungry." He did not become unconscious but lay down and slept for from five to forty-five minutes. He awakened feeling well. He was usually hungry and often ate on awakening. Attacks occurred most frequently about 3 p. m., three hours after dinner. He had had them

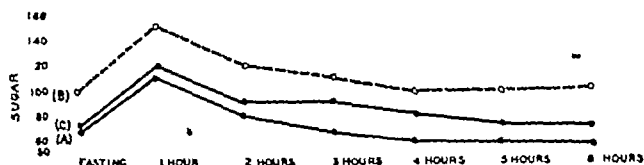


Chart 2 (case 2)—Epilepsy and hyperinsulinism. A, typical hyperinsulinism blood sugar curve; B, normal blood sugar curve; C, elevated blood sugar curve after administration of average daily dose of bromides used in the treatment of epilepsy.

before supper. At first, the attacks were not severe and occurred at intervals of about every two weeks. The attacks gradually increased in frequency and severity until they occurred two or three times a day. May 30, 1931, his mother found him unconscious in bed, about 7 a. m., before breakfast. He became conscious in about half an hour. He rested in bed until noon and felt better after eating dinner. He had no more attacks until March 3, 1932, about 9:30 p. m., about three and a half hours after supper. He was in bed asleep when his loud breathing attracted the attention of his mother. He "frothed at the mouth" and his "muscles jerked all over." He became conscious in about half an hour and felt well the next morning. The third attack occurred, April 10, about 10:30 p. m., four and a half hours after supper. There was stertorous breathing, the mouth frothed and the muscles jerked all over. He became conscious in half an hour.

The family history and previous illnesses have no bearing on epilepsy.

**Examination**—Physical examination was negative. His height was 5 feet 11 inches (180 cm.), his weight, 169 pounds (77 kg.). He has a fine physique.

TABLE 4—Blood Sugar After Bromides in Case 2

	Blood Sugar
Fasting	0.070 per cent
1 hour after 100 Gm. of dextrose	0.118 per cent
2 hours after 100 Gm. of dextrose	0.090 per cent
3 hours after 100 Gm. of dextrose	0.088 per cent
4 hours after 100 Gm. of dextrose	0.080 per cent
5 hours after 100 Gm. of dextrose	0.075 per cent

Laboratory examination of the urine was negative. The Wassermann reaction of the blood was negative. The blood sugar, three hours after a huge breakfast, consisting largely of carbohydrates, was 0.075 per cent. One hour later his blood sugar was 0.060 per cent. He was then given 100 Gm. of dextrose in water. The hourly blood sugar readings are given in table 5.

**Treatment and Results**—The patient was kept under observation in the hospital for two weeks. He was given no medicine of any kind but was placed on a diet of 75 Gm. of carbohydrate, 75 Gm. of proteins and 240 Gm. of fat a day, including cream and orange juice every two hours between meals. Since he had

had one attack at 5 a. m., he was given food at 4 a. m. He was taught to weigh and measure his food and to calculate his menus. The petit mal attacks have been reduced in frequency and severity—almost controlled—and he has had three convulsions since he has been on the diet. His fasting blood

TABLE 5—Hourly Blood Sugar Readings in Case 3

	Blood Sugar
Fasting	0.060 per cent
1 hour after 100 Gm. of dextrose	0.080 per cent
2 hours after 100 Gm. of dextrose	0.060 per cent
3 hours after 100 Gm. of dextrose	0.060 per cent
4 hours after 100 Gm. of dextrose	0.060 per cent

sugar readings one month after he had been on the diet was 0.080 per cent. Another dextrose tolerance test was made, June 27 (table 6).

#### NARCOLEPSY AND HYPERINSULINISM

Narcolepsy, or "sleep epilepsy" as it has been called, is characterized by paroxysmal attacks of somnolence and unconsciousness without convulsions. The underlying and precipitating causes of narcolepsy constitute as much of an unsolved problem as is the genesis of idiopathic epilepsy. It is probable that there are as many etiologic factors that may be involved in the production of narcolepsy as there are in epilepsy, the difference being that in "sleep epilepsy" the victim has not the constitutional convulsive tendency but has recurring attacks of unconsciousness without the grand mal seizures. Narcolepsy, like epilepsy, probably is not a disease entity but is a symptom of many different diseases.

Gelineau<sup>27</sup> first described a syndrome consisting of attacks of somnolence, or unconsciousness, associated with cataplexy, which he called narcolepsy. Later the

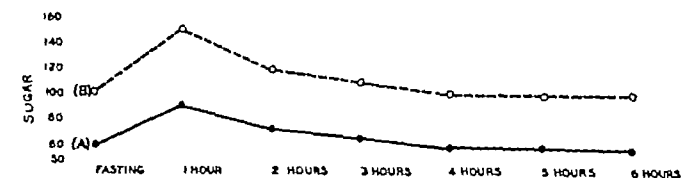


Chart 3 (case 3)—Epilepsy and hyperinsulinism. A, typical hyperinsulinism blood sugar curve; B, normal blood sugar curve.

syndrome has been called Gelineau's narcolepsy. While narcolepsy is a relatively rare condition, a number of cases have been reported and several excellent articles on the subject have appeared in the literature, among which may be mentioned those by Levin,<sup>28</sup> Cave,<sup>29</sup> Weech,<sup>30</sup> Richter,<sup>31</sup> Freeman,<sup>32</sup> Doyle and Daniels,<sup>33</sup> Wahl,<sup>34</sup> Wagner,<sup>35</sup> Collins,<sup>36</sup> Brittingham and Rogers,<sup>37</sup> Spiller,<sup>38</sup> Thrash and Massee,<sup>39</sup> and Jelliffe.<sup>40</sup> There

- 27 Gelineau. De la narcolepsie. *Gaz. d. hop.* 53: 626, 1880.
- 28 Levin. Max. Narcolepsy (Gelineau's Syndrome) and Other Varieties of Morbid Somnolence. *Arch. Neurol. & Psychiat.* 22: 1172, 1929 (Dec.).
- 29 Cave. H. A. Narcolepsy. *Arch. Neurol. & Psychiat.* 26: 50, 1931 (July).
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- 31 Richter. C. P. Pathologic Sleep and Similar Conditions. *Arch. Neurol. & Psychiat.* 21: 363, 375 (Feb.), 1929.
- 32 Freeman. Walter. Pathologic Sleep. *J. A. M. A.* 91: 67, 70 (July 14), 1928.
- 33 Doyle. J. B. and Daniels. L. E. Symptomatic Treatment for Narcolepsy. *J. A. M. A.* 96: 1370, 1372 (April 25), 1931.
- 34 Wahl. E. F. Narcolepsy. *South. M. J.* 24: 169, 170 (Feb.), 1931.
- 35 Wagner. C. P. Comment on the Mechanism of Narcolepsy. *J. Nerv. & Ment. Dis.* 72: 405, 416 (Oct.), 1930.
- 36 Collins. H. A. Ephedrine in the Treatment of Narcolepsy. *Ann. Int. Med.* 5: 1289, 1295 (April), 1932.
- 37 Brittingham. J. W. and Rogers. T. E. Narcolepsy—Report of Case with Symptomatic Relief. *J. M. A. Georgia.* 21: 142, 143 (April), 1932.
- 38 Spiller. W. G. Narcolepsy. Occasionally a Postencephalitic Syndrome. *J. A. M. A.* 86: 673, 674 (March 6), 1926.
- 39 Thrash. E. C. and Massee. J. C. Narcolepsy. *J. A. M. A.* 91: 1802, 1803 (Dec. 8), 1928.
- 40 Jelliffe. S. E. Narcolepsy Hypnolepsy Pyknolepsy. *M. J. & Rec.* 129: 313, 315 (March 6), 1929.



is a difference of opinion among neurologists as to the existence of idiopathic narcolepsy and as to the symptoms on which the diagnosis is based, but Gelineau's syndrome is generally accepted as descriptive of the typical case of narcolepsy. However, a number of

TABLE 6—Dextrose Tolerance in Case 3, June 27

	Blood Sugar
Fasting	0.060 per cent
1 hour after 100 Gm of dextrose	0.090 per cent
2 hours after 100 Gm of dextrose	0.075 per cent
3 hours after 100 Gm of dextrose	0.065 per cent
4 hours after 100 Gm of dextrose	0.050 per cent
5 hours after 100 Gm of dextrose	0.050 per cent
6 hours after 100 Gm of dextrose	0.050 per cent

cases of recurring attacks of drowsiness and unconsciousness, in which muscular rigidity from emotional disturbances (cataplexy) was not present, have been reported as narcolepsy.

A recent case of recurring attacks of unconsciousness, without convulsions, associated with hypoglycemia of pancreatic origin, suggests that in some cases narcolepsy may be a manifestation of hyperinsulinism. The dramatic recovery of this patient following a partial resection of the body and tail of the pancreas when all other efforts of treatment, including careful dietary management, had failed and death seemed imminent, brings the hope that there may be other cases of narcolepsy associated with insulogenic hypoglycemia that may be amenable to control, or cure, by dietary measures, or by surgery.

CASE 4—History—A white man, aged 20, brought to the hospital, July 1, 1932, referred by Dr. D. H. Chilton of Parrish, Ala., complained of weakness, hunger ("could eat a full meal and be hungry in an hour"), pain in the abdomen, and "sleeping spells," when he would be unconscious for several hours at a time.

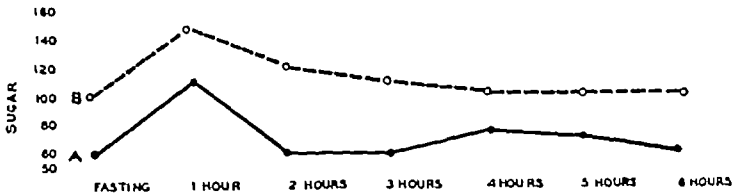


Chart 4 (case 4)—A, slightly irregular hyperinsulinism blood sugar curve; B, normal blood sugar curve.

The present illness began two years before when, without any cause that could be discovered, he "got sleepy and fell down" while working in a mine. He was unconscious for about three hours. Following this attack he had vague abdominal pains and was operated on for appendicitis, from which he made an uneventful recovery. About two months later he "went to sleep" again while working in the mines and was unconscious for several hours. He then felt well for more than a year, except that he would have "hungry weak spells." His meals did not satisfy him, but he had no more attacks of unconsciousness until March, 1932, when he "got sleepy" one afternoon while on a visit to a neighbor and remained unconscious for an hour. Following this attack, he had abdominal pains at irregular intervals, which were suspected as being symptoms of duodenal ulcer or gallbladder infection. Pains were irregular and not related to meals, though he usually felt better after eating. He was weak and unable to work. The "weak and hungry spells" continued. June 28 about three hours after breakfast, he "got sleepy" and was unconscious for two hours. He felt better after eating honey with his supper and breakfast. He had abdominal pains and ate no dinner, but at 4 p. m. he took a cup of milk and cornflakes. He felt better for an hour but then went into a profound coma.

Physicians who saw him thought that death was impending. After he was aroused he was nervous and somnolent but was restless through the night. The following morning, without food, he was brought 50 miles in an automobile to our clinic. He was very weak and drowsy on arrival. His blood sugar was 0.050 per cent. He was given 3 ounces (90 cc.) of orange juice and 5 ounces (150 cc.) of 5 per cent dextrose solution, and in a few minutes the drowsiness left him and he felt very much better, though he continued to have abdominal pain.

A dextrose tolerance test was made, July 3, his fasting blood sugar was 0.060 per cent. Hourly blood sugar readings after the ingestion of 100 Gm. of dextrose are given in table 7.

Treatment and Results—The patient was placed on a low carbohydrate high fat diet, carbohydrates 100 Gm., proteins 75 Gm., and fats 210 Gm., with orange juice or tomato juice, and cream every two hours between meals. The drowsiness left him, though he continued to have abdominal pain. He was so much improved at the end of two weeks that he returned home. He continued to improve for about ten days after returning home, though he complained that he became very weak in an hour or two after meals. He then became drowsy and had to take honey to keep awake. He returned to the hospital,

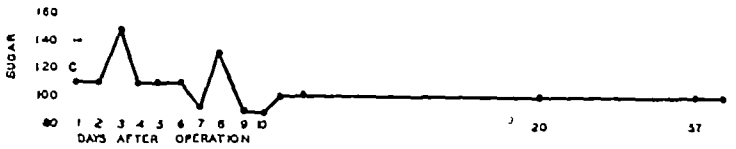


Chart 5 (case 4)—Daily fasting blood sugar readings after operation. Note the irregular level for the first week after operation followed by nearly constant normal fasting blood sugar levels at varying intervals for nearly two months.

July 23. He was drowsy and his blood sugar was 0.066 per cent, though he had eaten a full breakfast two hours before. Suspecting a pancreatic lesion, probably an adenoma (insuloma), we decided on an exploratory laparotomy, July 25, the operation was performed by Dr. Adrian S. Taylor, assisted by Dr. H. L. Cheves and Dr. Thomas Wolford.

Operation and Results—The exploration, under tribromethanol and ether anesthesia, revealed no pathologic changes of the duodenum, gallbladder, kidneys, suprarenal glands or other abdominal viscera, except adhesions of the posterior surface of the stomach to the peritoneum forming the posterior wall of the lesser sac. The pancreas was reddened but otherwise normal in appearance. About half the pancreas (body and tail) was resected, and the cut edges were seared with a diathermy needle. The incision was closed, without drainage. The operative recovery was uneventful, except that about one week after operation his temperature rose to 101 F., when a small hematoma in the abdominal wound was opened and drained. He left the hospital in three weeks.

The blood sugar readings after operation have been about normal, as shown in chart 5.

Subsequent History—The patient has had no tendency to somnolence or to the "sleeping spells," though he has had three

TABLE 7—Hourly Blood Sugar Readings in Case 4

	Blood Sugar
One hour	0.112 per cent
Two hours	0.060 per cent
Three hours	0.060 per cent
Four hours	0.055 per cent
Five hours	0.075 per cent
Six hours	0.075 per cent
Seven hours	0.070 per cent
Eight hours	0.060 per cent
Nine hours	0.060 per cent

meals a day and nothing between meals. His fasting blood sugar two months after the operation was 0.100 per cent.<sup>41</sup>

Comment—Sufficient time has not elapsed since the operation to determine whether or not this patient has been permanently cured of hyperinsulinism. The fact that his blood sugar has

<sup>41</sup> This case will be reported in detail at a later date by Drs. Scale, Harris, Adrian S. Taylor, George S. Graham and D. H. Chilton.



been normal and the hypoglycemic symptoms have not recurred in two months after operation give reason to hope for a permanent cure of the hyperinsulinism in this case

#### THE DIAGNOSIS OF HYPERINSULINISM

While some of the recurring attacks of grand mal and petit mal associated with hypoglycemia in epileptic patients may be due to the excessive secretion of insulin by the pancreas, in making a diagnosis of hyperinsulinism it should be remembered that hypoglycemic convulsions can occur from dysfunction of various other organs of internal secretion that play a part in carbohydrate metabolism. In reporting my first series of cases of hyperinsulinism in 1924, I stated in the conclusion<sup>3b</sup>

Since blood pressure readings have been low in all except two of the nondiabetic patients who have had symptoms of hypoglycemia, it seems possible that hypo-adrenalism may be associated with hyperinsulinism. It also seems probable that secretory disorders of the islands of Langerhans may be associated with dysfunctions of the thyroid, the pituitary bodies and other organs of internal secretion.

Cases of marked degrees of hypoglycemia due to organic diseases, or functional disturbance of other organs besides the pancreas have been reported as having been due to (a) deficient glycogenesis in the liver, either from poisons such as arsphenamine or other arsenicals, phenylhydrazine, phosphorus or other hepatotoxins (Cross and Blackford<sup>42</sup>), and from massive tumor of the liver (Nadler and Wolfer<sup>43</sup>), (b) inadequate mobilization of glycogen due to deficient secretion of the suprarenals, as in the case reported by Anderson,<sup>44</sup> in which the autopsy revealed an adenoma of the left suprarenal gland and in Addison's disease (Wadi<sup>45</sup>), (c) pituitary dysfunction (Cushing<sup>46</sup> Wilder<sup>47</sup>), (d) thyroid disturbance (Zubiran<sup>48</sup>). Apparently ovarian dysfunction may be a factor in the etiology of hypoglycemic convulsions, as in the hyperinsulinism case of Weil.<sup>49</sup> A woman with very low blood sugar levels constantly and frequently had the symptoms of an insulin reaction between her catamenial periods but had convulsions only just before and during menstruation.

Every possible cause of hypoglycemia besides pancreatic disease should be considered, including studies of all the other organs of internal secretion, and excluding them as factors if possible, before making the diagnosis of hyperinsulinism in an epileptic or narcoleptic patient.

#### LOW CARBOHYDRATE HIGH FAT DIETS IN HYPERINSULINISM

Early in my experience in dealing with hyperinsulinism I began using a low carbohydrate diet, consisting largely of 3, 5 and 10 per cent vegetables and fruits, combined with a high proportion of fats, with frequent feedings. I reasoned that the carbohydrates in

the form of vegetables and fruits, which must be digested before being absorbed and metabolized, would be released as dextrose in small quantities at a time and, therefore, would not stimulate the secretion of insulin so much as meals made up largely of foods of high carbohydrate content, particularly those containing cane sugar products. Fats, particularly cream and milk, were given with meals and between meals, with the idea that they are emptied slowly from the stomach. Therefore, the assimilation of the carbohydrates mixed with fats would be slow compared to the rapid emptying of the stomach and the accelerated metabolism after the ingestion of carbohydrate meals without fats. Sheperdson<sup>50</sup> states that the blood sugar level will rise on a low carbohydrate diet, and he quotes Weeks, Renner, Allan and Wishart<sup>51</sup> as having observed in a study of epileptic patients on high fat diets that in every case they developed hyperglycemia.

The diet in each case of hyperinsulinism should be calculated to meet the patient's nutritional needs. The adult hyperinsulinism patient of average height and weight should have about 2,250 calories, 90 Gm of carbohydrates, 60 Gm of proteins and 180 Gm of fats, divided into from five to seven feedings a day. A number of my patients have been overweight, and other clinicians have observed a number of obese patients with hyperinsulinism. In such cases the fats should be reduced, and a low caloric diet with food every two hours is indicated. In such cases I prescribe a diet of about 90 Gm of carbohydrate, 60 Gm of fat and 60 Gm of protein (1,140 calories) divided into five or six feedings a day. On such a diet the patient's activities should be restricted, and the amount of fats should be increased to 90 or 100 Gm, or even more if the patient is losing more than 2 pounds (900 Gm) a week or if he becomes weak.

In the underweight, asthenic hyperinsulinism patient a high fat diet of 90 Gm of carbohydrate, from 200 to 300 Gm of fat, and from 60 to 75 Gm of protein, divided into five or six feedings a day, will keep the blood sugar at a sufficiently high level to prevent hypoglycemic symptoms.

Careful blood sugar studies should be made on each patient for a few days after having been placed on a diet for hyperinsulinism, during which time the food should be weighed and measured. It is just as necessary to teach the hyperinsulinism patient food values, and to calculate and arrange the menus suited to his particular case, as it is to teach "diabetic arithmetic" to patients with hypo-insulinism (diabetes mellitus). The intelligent epileptic patient with hyperinsulinism usually becomes very much interested in "playing the game" of dieting because he has a holy dread of the paroxysms of convulsions.

It is essential to impress on the epileptic patient with hyperinsulinism the necessity for moderation in all things, particularly in physical exercise. Experiments on marathon runners show that physical exhaustion produces hypoglycemia (Levine, Gordon and Derick<sup>52</sup>). One of our epileptic patients observed that his attacks of both petit mal and grand mal occurred most frequently after or during strenuous games of baseball.

42 Cross J B and Blackford L M. Fatal Hepatogenic Hypoglycemia Following Neoarsphenamine. *J. A. M. A.* 94: 1739-1742 (May 31) 1930.

43 Nadler, W. H. and Wolfer J. A. Hepatogenic Hypoglycemia Associated with Primary Liver Cell Carcinoma. *Arch. Int. Med.* 44: 700 (Nov.) 1929.

44 Anderson H. B. A Tumor of the Adrenal Gland with Fatal Hypoglycemia. *Am. J. M. Sc.* 180: 71 (July) 1930.

45 Wadi W. Ueber Hypoglykämie bei Morbus Addisoni. *Klin. Wchnschr.* 7: 2107 (Oct. 28) 1928, cited by Cross and Blackford.

46 Cushing Harvey. The Pituitary Body and Its Disorders. Philadelphia: J. B. Lippincott Company, 1912.

47 Wilder J. C. A New Hypophysis Disease Picture. *Hypophyseal Simultaneous Hypoglycemia. Deutsche Ztschr. f. Nervenh.* 112: 192-250 1930.

48 Zubiran S. A Case of Hypoglycemia. *Medicina, Mexico* 9: 306-310 (April) 1929.

49 Weil Clarence. Dysinsulinism. Report of Case Associated with Convulsions to be published.

50 Sheperdson, H. C. The Efficacy of High Fat Diets in the Treatment of Chronic Hypoglycemia. *Endocrinology* 82: 182 (March-April) 1932.

51 Weeks D. F., Renner D. S., Allan F. N. and Wishart M. B. Fasting and Diets in the Treatment of Epilepsy. *J. Metab. Research* 3: 317 (Feb.) 1923.

52 Levine S. A., Gordon Burgess and Derick C. L. Some Changes in the Chemical Constituents of the Blood Following a Marathon Race with Special Reference to Development of Hypoglycemia. *J. A. M. A.* 82: 1778 (May 31) 1924.

The epileptic patient with hyperinsulinism should be taught all the rules of personal hygiene adapted to his particular needs, just as the patient with severe diabetes is taught how to live and enjoy health even though he has the handicap of a crippled pancreas

#### CONCLUSIONS

1 Three cases of epilepsy and one case of narcolepsy associated with hyperinsulinism do not prove that there are types of epilepsy and narcolepsy due to the spontaneous hypersecretion of the islet cells of the pancreas, but they do suggest a possible relationship. It therefore would seem advisable to make fasting blood sugar studies and dextrose tolerance tests on every patient who has recurring attacks of unconsciousness, with and without convulsions. Such studies on large groups of epileptic patients may determine if there is, or is not, a type of epilepsy of insulogenic character.

2 Up to this time, the patients who have had recurring attacks of convulsions and unconsciousness associated with hyperinsulinism have ranged in age from 17 to 57, about the same age incidence as in hyperthyroidism with and without adenoma of the thyroid. It therefore seems probable that if there is a distinct type of epilepsy associated with hyperinsulinism it will be found largely among young adults. However, hyperinsulinism is essentially a disease of the pancreas and, like hypo-insulinism (diabetes mellitus), it no doubt will be found also among children.

3 If there is a type of epilepsy associated with or due to functional hyperinsulinism, there is ample reason to believe that some such cases may be controlled by a low carbohydrate, high fat diet with frequent feedings, sufficient to maintain the blood sugar level at a point above which hypoglycemic convulsions occur.

4 A study of the blood sugar after the use of bromides in one case of epilepsy with an apparently fixed hyperinsulinism curve suggests that this drug may control the convulsions in epilepsy associated with hyperinsulinism by inhibiting the secretion of insulin, thus maintaining the blood sugar level above the point at which hypoglycemic convulsions occur. Bromides are not advised in the treatment of epilepsy associated with hyperinsulinism because of the harmful results of bromism, particularly when the same results may be obtained by dietary management, possibly combined with ephedrine, belladonna or phenobarbital.

5 Since a number of cases of recurring attacks of convulsions, associated with and without petit mal, have been proved to be due to insulomas, it seems probable that in some cases of epilepsy associated with hyperinsulinism adenomas of the pancreas may be found to be the cause of the convulsions, and such cases may be amenable to surgery. Pancreatic surgery for the relief of epilepsy or narcolepsy associated with hyperinsulinism should never be resorted to without ample blood sugar studies by a capable clinician, and only after a well directed effort has been made to control the convulsions by dietary and medical management.

6 In six operations on the pancreas for hyperinsulinism, three for removal of adenomas and three for partial resections, there was not a fatality. The excellent results of surgery for the relief of convulsions due to hyperinsulinism presage operations on the pancreas becoming more frequent, and it is predicted that surgeons in the future will learn from experience to estimate the amount of pancreatic tissue to resect in order to give relief from hyperinsulinism, as they have

done in the past in treating hyperthyroidism. Pancreatic surgery will always be difficult and dangerous and it should never be undertaken except by experienced and skilful surgeons, who can have associated with them clinicians experienced in the dietary management of metabolic diseases.

Highland Avenue and Sycamore Street

## USE OF HISTAMINE IN THE TREATMENT OF PRURITUS

### PRELIMINARY REPORT

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AND

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Millet and Brown<sup>1</sup> have treated patients with angioneurotic edema by repeated injections of small amounts of histamine and have obtained favorable results in a few instances. Several months ago, we administered the drug to a patient (case 1 in the accompanying table) with severe generalized urticaria and constant, intense pruritus, three weeks in duration. Epinephrine, ephedrine, and calcium salts had failed to give relief. The first subcutaneous injection of 0.5 mg of histamine resulted in complete disappearance of pruritus within twenty minutes. The wheals, however, were not appreciably affected. Eighteen hours later the pruritus returned. A second injection of the drug given at that time resulted in complete relief from itching within ten minutes and disappearance of all wheals within half an hour. Histamine was then administered twice daily for five days. Although wheals returned from time to time, their number constantly diminished, and they were not accompanied by pruritus except on two or three occasions. Each injection of histamine resulted in prompt relief from itching, when present, and gradual disappearance of the wheals. At the end of five days the patient was free of all symptoms and had only an occasional wheal. Three months later there had been no return of urticaria.

Because of this striking therapeutic result and the apparent effectiveness of histamine in relieving pruritus independently of its effect on urticarial lesions, the drug was administered not only to a small series of subjects with pruritus accompanying urticaria but also to a number of patients with itching due to other conditions. In all but one subject the customary therapeutic measures had been employed previously and without relief. The drug usually was administered in amounts of 0.5 mg twice daily, but in one subject 1.0 mg was given three times a day for several days and in two with bronchial asthma the first one or two injections were reduced to 0.2 or 0.3 mg. Doses of 0.5 mg usually caused moderate to intense flushing of the face and neck with transient headache, and occasionally the subjects noticed palpitation for a few minutes. No untoward reactions were encountered, but the drug was not administered to patients with myocardial insufficiency or angina pectoris. Doses of 0.5 mg did not

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<sup>1</sup> Millet, R. F. Heat Sensitivity Angioneurotic Edema, Purpura and Ulcers of the Leg Following Femoral Thrombophlebitis, with a comment by Dr. George E. Brown. *M. Clin. North America* 15: 237 (July) 1931.

<sup>2</sup> Two preparations of histamine were used: histamine dihydrochloride marketed in 1:1000 solution as Imido by Hoffmann-La Roche, Inc., and histamine acid phosphate marketed as *Er,amine Acid Phosphate* by Burroughs Wellcome & Co.

precipitate asthmatic attacks in the two subjects with bronchial asthma. All patients were kept in bed for one hour after each injection of histamine.

## RESULTS

Thirteen patients in all were treated, and over half of these obtained at least temporary and partial relief from itching, as shown in the table. Five patients in addition to the case just reported had pruritus associated with urticaria. One was completely relieved for two hours after the first injection of the drug, while another reported partial relief after the second dose of histamine and was practically free of symptoms after the third injection of the drug. In both of these patients, urticaria and pruritus subsequently returned. Further treatment with histamine gave partial relief in the first but was ineffective in the second. In one other subject with urticaria (case 5), the symptoms almost completely disappeared during the period of treatment, but improvement occurred so slowly that the possibility of spontaneous convalescence must be considered.

the treatment of urticaria. Brack<sup>5</sup> and Lichtman<sup>6</sup> also employed the drug successfully by mouth as an antipruritic agent. Several of our patients were given ergotamine tartrate ("Gynergen") by mouth in doses of 1 mg three times daily for five days either before or after treatment with histamine. In none was a favorable therapeutic response observed, as shown in the table.

With the exception of one subject with urticaria (case 5), all the patients who were benefited by treatment with histamine showed distinct improvement or were almost completely relieved of pruritus after the first one to three injections of the drug. In four cases, in addition to the one reported at the beginning of this communication, the results were sufficiently impressive to warrant more detailed description.

## REPORT OF CASES

CASE 3—J. G., a white man, aged 36, a chauffeur, complained of generalized urticaria with intense itching, two days in duration. He was in such great distress that it was decided

*The Treatment of Pruritus with Histamine*

Case	Sex*	Age Years	Diagnosis	Duration of Pruritus	Treatment with Histamine		Result	Comment
					Amount Given Mg †	Duration of Treat- ment Days		
1	♀	29	Urticaria	3 weeks	0.5 b i d	6	Complete relief	Still free from symptoms three months later
2	♂	24	Urticaria	3 months	0.5 b i d	10	No relief	
3	♂	36	Urticaria	2 days	0.5	1	Immediate relief	Urticaria and pruritus returned after two hours treatment with ergotamine tartrate ineffective. histamine, 0.5 mg b i d for five days gave partial relief.
4	♀	32	Urticaria bronchial asthma	1 year	0.3 0.5 b i d	4	Practically complete relief	Urticaria and pruritus returned two weeks after discharge. subsequent treatment with histamine ineffective.
5	♀	21	Urticaria	6 weeks	0.5 b i d	16	Practically complete relief	Possibly spontaneous recovery. ergotamine tartrate previously ineffective. free from symptoms one month after treatment.
6	♀	40	Urticaria	2 days	0.5 daily	6	No relief	
7	♀	49	Dermatitis cause unknown	18 months	0.5 b i d	7	Partial relief	
8	♂	42	Pruritus in crural region bronchial asthma	1 year	0.2 0.5 b i d	5	Practically complete relief	Pruritus returned three weeks after discharge. subsequent treatment with histamine ineffective. ergotamine tartrate ineffective.
9	♀	45	Pruritus ani	1 year	0.5 b i d	4	No relief	Ergotamine tartrate previously ineffective.
10	♂	58	Pruritus ani	Several years	0.5 b i d - 10 t i d	20	No relief	Ergotamine tartrate previously ineffective.
11	♂	55	Pruritus ani	1 year	0.5 b i d	7	No relief	
12	♀	34	Pruritus vulvae	3 years	0.5 b i d	8	Practically complete relief	Subsequent treatment 0.5 mg of histamine twice weekly for five weeks. only occasional mild itching of short duration. five months after discharge.
13	♀	56	Kraurosis vulvae	17 years	0.5 b i d	16	Partial relief	

\* In this column ♂ indicates male ♀ female  
† By subcutaneous injection

Seven of the thirteen subjects treated with histamine had pruritus due to conditions other than urticaria, and four of these were benefited by the treatment. One patient with pruritus vulvae, three years in duration, obtained lasting and practically complete relief from itching. Another, who had had severe pruritus of undetermined etiology in the crural regions for one year, was almost entirely free of symptoms for three weeks after four days of treatment. Partial relief from itching was obtained in one subject with severe, generalized dermatitis of unknown cause, eighteen months in duration, and in another with pruritus due to kraurosis vulvae seventeen years in duration. The three patients in this group who failed to obtain relief from histamine all had pruritus ani.

Maur<sup>3</sup> and Babalian<sup>4</sup> reported favorable results from the oral administration of ergotamine tartrate in

to proceed immediately with histamine therapy. Three minutes after the subcutaneous administration of 0.5 mg of the drug, itching was completely relieved, and within seven minutes practically all the wheals had disappeared. Two hours later a number of wheals returned with moderate itching. The patient was given ergotamine tartrate, 1 mg by mouth three times daily for five days without effect. Histamine, 0.5 mg, was then administered subcutaneously twice daily for five days with partial relief of the urticaria and itching.

CASE 4—F. U., a white married woman, aged 32, had had bronchial asthma and almost constant generalized urticaria with moderate to intense itching for one year. Calcium salts by mouth and epinephrine by subcutaneous injection had failed to give relief. The patient was admitted to the hospital to receive injections of histamine twice daily for four days. The first dose of the drug, 0.3 mg, had no effect on the symptoms, but the second injection, amounting to 0.5 mg, gave complete

3. Maur H. W. Ergotamine inhibiteur du sympathique etude en clinique comme moyen d'exploration et comme agent therapeutique. Rev. Neurol. 11104 1926.  
4. Babalian L. Le tartrate d'ergotamine dans l'urticaria. Bull. soc. franc. de dermat. et syph. 36 402 (April) 1929.

5. Brack, Wilhelm. Ueber das Wesen und die Bedeutung der Alimenteren Hamoklasie. II. Die Verschiedenartigkeit des Reaktionsablaufes und ihre Beurteilung. Sympathikotonische und Parasympathikotonische Reactionen. Ztschr. f. d. ges. exper. Med. 61 150 1928.  
6. Lichtman S. S. Therapeutic Response to Ergotamine Tartrate in Pruritus of Hepatic and Renal Origin. J. A. M. A. 97 1463 (Nov. 14) 1931.

relief from itching for five and one-half hours. On the following day the first injection of the drug, 0.5 mg, gave prompt and almost complete relief from the pruritus, and throughout the remainder of the period of treatment and for two weeks after leaving the hospital, the patient was practically free of all symptoms. Urticaria and pruritus then returned, and subsequent treatment with histamine, 0.5 mg, twice weekly for two weeks, was ineffective.

CASE 8—I C, a white man, aged 42, a paper hanger, had had bronchial asthma for several years and for one year had complained of severe and almost constant pruritus in both groins with generalized pruritus at times. Local applications of many kinds, calcium salts by mouth, and ultraviolet radiation had failed to give relief. The patient was admitted to the hospital for five days for treatment with histamine. On the first day he received two injections of 0.2 mg each, of the drug. The first of these seemed to give slight relief, and the second gave definite relief from pruritus for several hours. During the remaining four days of treatment the patient received 0.5 mg of the drug twice daily. After the first injection on the second day of treatment he was free from itching during the remainder of his stay in the hospital, except for one short attack of moderate severity each night. For three weeks after leaving the hospital he continued to be free of itching during the daytime and to have only an occasional mild attack at night. At the end of this time, however, severe and practically constant pruritus returned. The patient was then given ergotamine tartrate, 1 mg by mouth, three times daily for five days, without relief. Daily injections of histamine, 0.5 mg, were then administered for three weeks, without result.

CASE 12—L S, a white married woman, aged 34, was admitted to the hospital because of chronic endocervicitis, leukorrhea and practically continual, moderate to severe pruritus vulvae, three years in duration. She had been under the care of a gynecologist, an internist and a dermatologist and had failed to improve. Douches, local applications, cauterization of the cervix of the uterus, ultraviolet radiation, calcium salts and viosterol by mouth, and a low carbohydrate diet all had failed to give relief. The general physical examination was negative. Repeated urinalyses revealed no abnormalities, and the fasting blood sugar content was 97 mg per hundred cubic centimeters of blood. For many months the patient had been taking one hot boric acid douche daily without relief of symptoms, and this treatment was continued during her stay in the hospital. Histamine, 0.5 mg, was administered subcutaneously twice daily for eight days, and then, after the patient was discharged from the hospital, 0.5 mg was given twice a week for five weeks. The first injection of histamine had no appreciable effect on the pruritus. Following the second injection of the drug, however, all itching disappeared, and, except for a few very brief mild recurrences, the patient has been free of pruritus during the five months since leaving the hospital.

#### COMMENT

The fact that, with one exception, those patients who improved while being treated with histamine were distinctly benefited or almost completely relieved of pruritus by the first few injections of the drug indicates that the histamine was responsible for the improvement. In the case of the exceptional subject (case 5), the possibility of spontaneous convalescence must be entertained because of the gradual subsidence of symptoms during the period of treatment.

No explanation is available for the favorable therapeutic responses obtained nor is it known why histamine should be effective on one occasion and subsequently fail to relieve a relapse of symptoms. Millet and Brown<sup>1</sup> have suggested that repeated injections of small amounts of histamine produce a state of tolerance to the drug and that this is accompanied by a diminished reactivity of the skin. Thus, they believe, explains the therapeutic effect of the drug in certain patients

with angioneurotic edema. Millet and Brown,<sup>1</sup> however, employed much smaller doses of histamine than were used in the present investigation. No evidence of diminished sensitivity to histamine was observed in our patients, and the prompt relief of symptoms in the favorable cases seems to indicate that the results were due to some other mechanism than a change in tolerance to the drug. The direct effect of the drug on the minute vessels of the skin may be the responsible factor.

The results obtained in the present study warrant further investigation of the value of histamine in the treatment of pruritus. This report is submitted in the hope that other investigators may have an opportunity to employ the drug, so that its therapeutic effectiveness may be evaluated by observations in a large number of patients. It would be of interest to observe the effect of the drug on the pruritus of such dermatologic conditions as lichen planus and pityriasis rosea and on itching associated with jaundice, uremia, lymphoblastoma and leukemia.

#### SUMMARY AND CONCLUSIONS

1 Histamine was administered subcutaneously, usually in doses of 0.5 mg twice daily, to six patients with pruritus associated with urticaria and to seven subjects with pruritus due to other conditions.

2 Three of the six patients with pruritus accompanying urticaria were promptly benefited by the treatment. In one of these, lasting and complete relief from itching was obtained. In the other two, complete or practically complete relief was followed by a relapse of pruritus. Subsequent treatment with histamine failed to cause improvement in one of these and was only partially effective in the other.

3 Four of the seven patients with pruritus due to conditions other than urticaria were improved by treatment with histamine. One patient with pruritus vulvae, three years in duration, obtained lasting and practically complete relief from itching. One patient with pruritus of undetermined etiology in the crural regions, one year in duration, was almost completely relieved of his symptoms for more than three weeks. Partial relief of itching was obtained in one patient with generalized dermatitis of unknown cause and in another with kraurosis vulvae. The three patients in this group who received no benefit from the treatment with histamine all had pruritus ani.

4 Five patients were given ergotamine tartrate by mouth in doses of 1 mg, three times daily for five days, either before or after treatment with histamine. In all, ergotamine failed to relieve the itching.

5 The results of the present study warrant further investigation of the value of histamine in the treatment of pruritus.

330 Brookline Avenue

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**Average Consumption of Coffee**—I am told that our country [the United States] constitutes the biggest coffee pot in the world. Through your efforts nearly one half of 25,000,000 bags which constitutes the world's production of this delightful breakfast beverage is, figuratively speaking, poured down the cavernous opening of this gigantic pot. About half of this is dumped from cans and packages and the other half from bulk coffee. From the great spout of the pot there is poured a roaring and steaming Niagara of 60,000,000,000 cups a year, an average of one and one-third cups daily for every man, woman and child in the United States.—Carson, J. S. *Coffee's Role in the American Foreign Trade*, Brazil, December, 1932.

# THE TYPHUS AND ROCKY MOUNTAIN SPOTTED FEVER GROUP

## DEVELOPMENTS IN EPIDEMIOLOGY AND CLINICAL CONSIDERATIONS

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In the United States, efficient modern quarantine procedure, based on the newer scientific knowledge of the sources and modes of infection, has in recent years created an effective barrier against the introduction of epidemic typhus fever, and the higher standards of personal hygiene and environmental sanitation tend to hinder development of the disease within our borders.

Epidemic typhus is a disease of high communicability and high mortality, occurring in temperate and in cold zones, in the winter and in the spring, associated with filth and overcrowding and transmitted from man to man by the body louse, *Pediculus humanus var corporis*.

On this continent, a variety known as tabardillo has been recognized in Mexico since the Spanish Conquest, though Sambon and Mooser present evidence that it existed there before that time.

Typhus was first differentiated from typhoid by Gerhard, who studied the Philadelphia epidemic of 1836. Several large epidemics occurred in a number of our seaports along the Atlantic Ocean and the Gulf of Mexico during the nineteenth century. Most of these outbreaks were traceable to recently arrived immigrants from the Old World. The last of these epidemics occurred in New York in 1892 and 1893. A few smaller outbreaks have occurred since then, but have been limited to immigrants in detention.

Tabardillo, the louse-borne typhus of Mexico, occasionally has been imported into the United States, and localized outbreaks, with high mortality, have resulted. Examples of these are the outbreaks reported by Armstrong in New Mexico, by Boyd in Iowa and by Cumming in California.

The mild form of typhus fever now being increasingly designated endemic typhus was first observed by Brill in New York, in 1897, and was differentiated by him from typhoid, with which it was then confused. Brill was for some years reluctant to admit its identity with typhus because of its different seasonal distribution, the lack of evidence of communicability in spite of its origin in the tenements, the absence of evidence of infestation by lice, the mildness of the symptoms and the low fatality rate—less than 1 per cent. In many localities the disease is still usually called Brill's disease or Brill's fever. Since 1910 this mild form of typhus has been noted by various observers from New England south, along the coast, to the Mexican border. Maxcy's epidemiologic studies indicated the existence of a rodent reservoir, with accidental transmission to man by some blood-sucking ectoparasite of rats or mice, namely, the flea or mite.

At the time this study was begun, two years ago, there was, in spite of Maxcy's fundamental work, much confusion in regard to the probable vector of endemic typhus and a variety of insects and arachnids were suspected by different workers. Among these vectors were the tropical rat mite, the common North American chigger, the body louse, the head louse, the *Anopheles* mosquito, the bedbug and the ticks. It is now obvious

that much of this chaos was due to the fact that two distinct clinical entities were being confused, and for this reason Maxcy's observations were not more widely accepted.

The author was early impressed by the fact that certain cases occurring east of the Appalachian Mountains, giving a Weil-Felix reaction and introduced to him as typhus, did not fit the epidemiologic pattern of Brill's fever, and presented a different and more severe clinical picture. At first looked on as a variant of the typhus group, the similarity of this group of cases to Rocky Mountain spotted fever became increasingly obvious, and the condition soon came to be regarded as a form of spotted fever.<sup>1</sup> It was eventually definitely established to every one's satisfaction by Badger's cross-immunity tests and other animal experiments, as a type of Rocky Mountain spotted fever.<sup>2</sup>

This disease, for which the tentative designation of eastern type of Rocky Mountain spotted fever was proposed by McCoy, is essentially, if not completely, identical with the spotted fever of the Rocky Mountains that has been the subject of so much intensive study during the past three decades.

In 1896, Wood reported clinical data on the mild spotted fever of Idaho, submitted by eight physicians whose experience extended back fourteen years. A clinical account of this disease was given by Maxcy in 1889. The more virulent Montana type was first reported by Gwinn and McCulloch in 1902, but physicians then living recalled cases occurring before that time, the earliest one in 1885, seen by Coughenour. The disease was at first usually called black measles, but the term spotted fever soon became spontaneously general. The alternative term, tick fever, was frequently used. Later it came to be generally designated Rocky Mountain spotted fever because of the supposed geographic limitation of the disease.

The disease occurs in the spring months and is transmitted by the wood tick *Dermacentor andersoni*, as demonstrated by Ricketts, King, and McCalla and Brereton. The virus is to some extent hereditary in the tick, but the existence of a rodent reservoir of the disease is generally assumed.

The eastern type of the disease is presumably transmitted by two or three varieties of ticks, of which the common dog tick, *Dermacentor variabilis*, is probably the most important. The season of prevalence is somewhat later than that of the western types. The disease has been present in the region east of the Appalachian Mountains for over twenty years. The earliest cases were apparently observed on the islands off the Atlantic Coast. The cases were usually, and to some extent still are, diagnosed typhoid, black measles or meningitis. Some physicians who had seen Old World epidemic typhus noted the resemblance and made a diagnosis of typhus, others ruled out typhus on the basis of similar experience. Since the introduction of the Weil-Felix reaction, in 1915, more of these cases have been diagnosed typhus fever, as the reaction is present in most of them. In the literature of the past twenty years there are scattered reports of what were unmistakably cases of this disease, although they were not diagnosed as such. Unpublished records of cases extend back several years farther.

The riddle of endemic typhus has been solved largely by Maxcy's original epidemiologic work, confirmed and

Read before the Section on Practice of Medicine at the Eighty Third Annual Session of the American Medical Association, New Orleans May 11, 1932.

<sup>1</sup> Rumreich, A., Dyer, R. E. and Badger, L. F. Pub. Health Rep. 46: 470 (Feb. 27) 1931.  
<sup>2</sup> Badger, L. F., Dyer, R. E., and Rumreich, A. Pub. Health Rep. 46: 463 (Feb. 27) 1931.



amplified by Rumreich, Dyer and Badger, and by the recent work of Dyer, Rumreich and Badger, at the National Institute, in recovering the virus from rat fleas that had been obtained at typhus foci.<sup>3</sup> These findings have been confirmed by Kemp. The virus has been recovered also from brains of wild rats by Mooser, Castaneda and Zinsser, in Mexico, and by Dyer in this country. Dyer and Ceder have transmitted the disease experimentally to animals by means of the rat flea



Fig. 1—Spotted fever, Eastern

Some European workers have attempted to explain the interepidemic survival of the virus on the basis of inapparent infections in man, for the detection of which they have devised highly refined modifications of the Weil-Felix reaction. American investigators are inclined to regard endemic flea-borne typhus as the form in which the virus survives between epidemics.

The diseases mentioned form but a small part of a large group of diseases of the type of both the typhus and the Rocky Mountain spotted fever occurring in all the continents. Endemic typhus is known to occur in various parts of South America, Europe, Asia and Australia. Forms of the tick-borne spotted fever are known to exist in Europe, Africa and Asia. They differ somewhat in their characteristics but appear to be, essentially, the same disease.

We shall consider some features of the two diseases of this group that occur endemically in this country. In this connection it should be borne in mind that the typhus described is that seen in New York, Baltimore, Savannah, Tampa and smaller urban communities in Georgia and Florida, the spotted fever is the eastern type of the disease as observed along the Atlantic seaboard from New York to Georgia.

#### TYPHUS

Endemic typhus is essentially an urban disease. It attains its highest prevalence in our seaports and tends to extend inland along lines of communication, both by water and by rail. Most of the cases occur in the late summer and fall. Men are attacked much more frequently than women, probably because of their greater occupational exposure to infection. For the same reason the middle age groups contribute the largest proportion of cases. Endemic typhus is rare among children. No social stratum is exempt. Handlers of food are exposed to greater risk of infection than other occupational groups. Most cases occur sporadically, but occasionally multiple cases originate from a single focus of

infection. The sources are rat-infested premises, provided infected rat fleas are present. The incubation period, seldom ascertainable, varies from six to fourteen days. Secondary cases have not been observed.

The onset is, with about equal frequency, either abrupt, with a chill or chilliness, slight fever, headache, dizziness, anorexia and prostration, or gradual, with irregular development of symptoms and intervening periods of subjective improvement during which the patient may be ambulatory.

The temperature rises in steplike fashion each afternoon, reaching 102 to 105 F. in from three to six days, with morning remissions of 1 to 3 degrees. The fever lasts from ten to sixteen days, usually fourteen days. Defervescence is generally by rapid lysis.

The rash appears between the fourth and the sixth days, as a rule it occurs on the fifth day. It appears first on the lower part of the chest, anteriorly and laterally, and over the upper part of the abdomen, it also frequently appears on the medial surfaces of the arms. In many cases there is no further extension, but frequently the back is next involved, and less often the eruption becomes fairly well generalized though seldom profuse. The palms, soles and the face are involved only very rarely. The rash consists of macules varying from a rose to a dull red, from 2 to 4 mm. in diameter, with rather poorly defined margins. These lesions fade, but usually do not completely disappear, on pressure. In some cases many of the lesions are maculopapules. Occasionally, some are petechial. The rash is in evidence for from two to nine days and then rapidly disappears, so that by the time of defervescence there seldom remains any vestige of it. In occasional cases no rash is observed at any time. In Negroes the condition is discernible only when papular lesions are present.

At the height of the disease the face is flushed and the tongue dry and coated, sometimes with a vividly red tip and edges. Conjunctivitis, sometimes intense, is present in most cases. The spleen is seldom palpable.



Fig. 2—Spotted fever. Case originating in Virginia

The pulse is, as a rule, remarkably slow in ratio to the temperature. There is about some of the more severe cases a peculiar mousy odor. The commonest symptoms at the height of the disease are, in order of frequency: prostration, severe headache, usually frontal, constipation, often obstinate, nausea, low backache and pains in the legs, generalized aching, unproductive cough, photophobia, night sweats often preceded by chilliness, and sore throat.

The mental condition is often unaltered. Apathy is frequently noted, this may alternate with intervals of

<sup>3</sup> Dyer, R. E., Rumreich, A. and Badger, L. F. Pub. Health Rep. 16: 334 (Feb. 13) 1931.

irritability, during which insomnia is common. Occasionally there is a mild delirium, when this occurs, it is usually of short duration.

The leukocyte count is within normal limits or shows leukopenia. Rarely, there is low grade leukocytosis. The urine at times contains a trace of albumin. The blood serum agglutinates *B. proteus* X<sub>10</sub>, this reaction can be obtained after the first week.

Convalescence, as a rule, is speedy in young patients. Older persons recover more slowly. The fatality rate is less than 1 per cent. In most fatal cases there are preexisting complicating pathologic processes.

There is no specific therapy. Treatment is symptomatic. The patient should be kept quiet, physically and mentally. A copious intake of fluid is highly desirable. Nourishment should be kept up. The constipation is best relieved by enemas. Antipyretics should be avoided, but tepid sponging is of value. An ice cap applied to the head is often useful. Sedatives, barbitol or codeine may be used when indicated.

For the prevention and possible eradication of the disease, elimination of rat harborages is indicated. There is at present in process of development at the National Institute of Health a vaccine prepared from infected fleas, which gives some promise of efficacy as a prophylactic. A vaccine prepared by Zinsser and Castaneda from the peritoneal exudate of specially treated rats infected with Mexican typhus is now undergoing field trial.

#### SPOTTED FEVER

The Eastern type of spotted fever occurs in the late spring and throughout the summer, with an occasional case in the fall months. Cases in men predominate. Cases in children constitute a large proportion of the total number. Spotted fever tends to recur in the same locality, sometimes in successive years, sometimes after intervals of several years. Infection is derived from the bite of an infected tick, occasionally it follows the crushing of engorged ticks. The incubation period varies from two to twelve days, but most often lasts from three to seven days. Multiple cases in a household are not uncommon.

The onset is usually abrupt, in the late afternoon or early evening. The initial symptoms are similar to those of typhus, but the prostration and generalized aching are more pronounced, and frequently there is pain in the neck, occasionally there is also abdominal pain.

The fever runs a course much like that of typhus, but reaches higher levels. In severe cases it may not display the marked remissions, and tends to last three weeks, although the range is from eleven to twenty-four days, a duration of fourteen or fifteen days is common.

The rash (figs 1 and 2) appears between the second and the fifth days, most frequently it is seen on the third or fourth day. The site of first appearance is nearly always the wrists and the ankles. The rash is usually noted next on the back, it then rapidly becomes generalized. It spreads in centripetal fashion. The palms and soles are usually involved, the face frequently and the scalp occasionally. The extension is complete in from two to three days. In persons with deeply suntanned hands and forearms the early stages of the rash may be readily overlooked on these parts. The lesions are at first faint roseolus macules, from 2 to 8 mm in diameter, which often fade in the mornings and reappear with the rise of fever during the afternoon. They grow more distinct from day to day, and by the middle of the second week are definitely petechial

in all but the milder cases. The rash in its full development is purpuric, and as a rule most abundant and most intense on the wrists and ankles, the legs, the upper part of the back, the shoulders, the lateral surfaces of the arms, and the buttocks, in the order mentioned (fig 3). Some of the lesions may become confluent, especially on the ankles. A well developed purpuric rash often persists for several weeks as dusky, purplish or yellowish-brown spots, which may be accentuated by a hot bath or by application of a tourniquet.

Sometimes there is a branny desquamation, occurring especially over the legs, commencing late in the disease or early in convalescence. Occasionally there is, at the site of the tick bite, a small ulcer, with or without enlargement of the regional lymph nodes. Rarely is the tick found attached after the onset of symptoms. Simultaneously with the development of the cutaneous eruption there frequently appear hemorrhagic spots, 2 or 3 mm in diameter, on the buccal

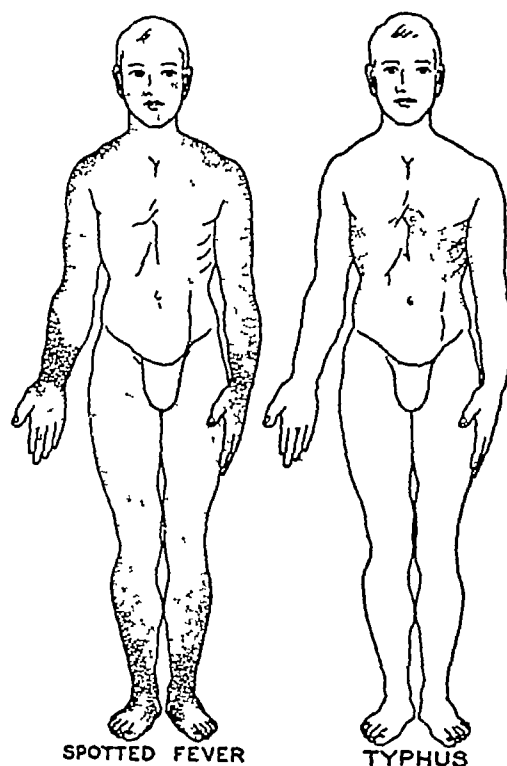


Fig. 3—Characteristic types of distribution of rash in endemic typhus fever and spotted fever.

mucosa, particularly over the palate. The tongue is dry and coated in the center, with a dark red border, the papillae are frequently so enlarged as to give the tip and edges a mulberry-like appearance. The pharyngeal mucosa is usually inflamed. Occasionally small ulcers appear on the palate or tonsils. The face is flushed, sometimes dusky. The eyes are injected. Occasionally there is marked edematous swelling of the face, hands, feet and genitalia. Rigidity of the neck, with presence of Kernig's sign, is frequently noted. The spleen is usually enlarged and tender. The pulse tends to be more rapid, in ratio to the temperature, than in typhus. A very rapid pulse is of bad prognostic significance.

The symptoms are much the same as those enumerated for typhus fever. Nausea and vomiting are more common, as is pain in the back of the neck. Epistaxis and dysuria occur, but rarely. Disturbances of the central nervous system are much more severe than in

typhus The lethargy may progress to stupor or even coma. Delirium is common, and may be violent and protracted. Meningismus is frequent. In severe cases there may be loss of sphincter control. Hyperesthesia and tremors are occasionally noted. Not infrequently, there are pains in the muscles, bones and joints.

The white blood cell count in the early stages may be within normal limits, at the height of the illness a definite leukocytosis as a rule occurs. The red blood cell count often falls as the disease progresses. The urine may contain small quantities of albumin and, rarely, casts. The Weil-Felix reaction is usually, but not always, positive.

Convalescence tends to be protracted. The commonest complications are mental confusion, deafness and visual disturbances, which may persist for weeks.

The fatality rate is about 25 per cent. When death occurs, it is usually in the second week.

There is no specific treatment. Baths and sedatives may serve to quiet the patient and help to conserve his strength. Richards and others familiar with the western types of the disease recommend the use of caffeine and digitalis as cardiac stimulants when indicated. Maintenance of an adequate intake of fluid is important.

Prevention must depend largely on personal prophylaxis. When known tick-infested areas are entered during the spring and summer, it is advisable to wear such clothing as will compel the ticks to crawl up the outside of the clothing. The ticks then may be detected on contact with the skin of the neck, or before reaching it. In addition, an examination of the entire body, especially of the hairy parts, and also of the inside of the clothing, should be made at least once during the day and again on retiring. Ticks seldom attach immediately. After removal of attached ticks, it is customary, in the West, to cauterize the spot with silver nitrate or nitric acid. The tick vaccine developed by Spencer and Parker confers a substantial measure of protection.

#### ABSTRACT OF DISCUSSION

DR VICTOR H BASSETT, Savannah, Ga. It is astonishing that there occurs in the eastern part of the United States an eruptive fever of the type of the Rocky Mountain fever, even if it has some separate features. One is impressed by the fact that the clinical pictures described by Dr Rumreich and his associates for the fevers of the endemic typhus type are clear cut. In observing these fevers over a term of years I had some difficulty in classifying them because the fact that they were two diseases was not known at that time. This was especially true in regard to the mortality rate. More cases of Brill's disease have been observed in Savannah probably than in any other locality in the United States of equal size. These cases have furnished a considerable part of the material which the officers of the Public Health Service have studied. For many years it has been recognized that certain of our endemic fevers did not find a place in the list of commonly recognized fevers. The first observation in Savannah of a fever of this type was in May, 1909. Since 1915 we have known in Savannah that we had an endemic fever different from typhoid in that it was less severe clinically, with less fatality, and of shorter duration. These cases have gradually increased in number until we now have from forty to eighty yearly. Over a nine-year period the number of cases observed has been 510, of which 486 were in white persons and 24 in Negroes. The annual morbidity rate is therefore 55.2 per hundred thousand of population. The annual morbidity rate of Brill's fever for the white population was 125.3 per hundred thousand of population. For the Negro population it was only 7. The annual mortality rate for the entire population was 1.98, for the white population, 2.94, for the Negro popu-

lation, 0.87. The mortality has certainly increased under our observation. Of the first 100 cases we had only one death, and in the whole series we had mortality and morbidity of one to twenty-five, and in one year it ran as high as one to twelve. It is remarkable that only seldom are there two or more cases in the same family at the same time, although numerous instances have been observed in which cases have occurred from year to year in families living in the same residence or working at the same place of business. It is probable that mild cases are frequently overlooked in families in which severe cases occur. Prophylaxis seems now possible from the work of the Public Health Service, and a statement is needed with regard to the means of procedure to control or lessen this disease. The fact that the rat is the animal host makes control difficult and expensive, but it is still possible for the individual who can control his surroundings both at home and in his business to protect himself. It would seem desirable, on account of the epidemiologic relations of this disease, to have a different term for this disease, distinguishing it from epidemic typhus. I do not deal with the eastern type of Rocky Mountain fever, since we have had very few cases of this type.

DR G GILL RICHARDS, Salt Lake City. This is a disease that we felt belonged strictly to us out West. I feel that it is really a very serious disease. In some regions we have a mortality rate as high as 90 per cent among our adults, and it has almost ruined some of our industries. It is certainly very interesting to us out there to know it is appearing in the eastern states. I should like to ask whether vaccine prophylaxis is being used.

DR ADOLPH S RUMREICH, Washington, D C. No vaccine has been used in the East excepting among those of us who are working with the disease in the field of the laboratory. There has as yet been no demand for it. The disease is pretty severe. The mortality rate averages about 25 per cent in the East. The vaccine should, of course, afford considerable protection.

#### MELANURIA

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AND  
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Melanuria has been reported as occurring in a variety of apparently unrelated pathologic conditions, such as melanotic neoplasms, wasting diseases, intestinal obstruction, lobar pneumonia, pernicious anemia, extensive liver destruction, exposure to the sun's rays, and after roentgenologic treatment. The sum of these observations might easily give the impression that melanogen in the urine is not an uncommon finding. However, a survey of fifteen cases of melanotic malignant growths treated at the Presbyterian Hospital<sup>1</sup> during the past ten years revealed the fact that melanin was found in the urine of only four of these patients. It seemed incongruous that melanuria should be reported as occurring in so many conditions unassociated with necropsy evidence of pathologic melanin formation, whereas in those diseases in which the excessive production of melanotic pigment is a characteristic feature, melanuria was demonstrated in only about 25 per cent of the Presbyterian Hospital cases.

The foregoing observations prompted us to evaluate the analytic methods used for the identification of melanin in the urine. A series of cases—that include all the conditions in which melanuria has been previ-

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<sup>1</sup> We are indebted to Dr A O Whipple for permitting us to use the case records of his service.

<sup>2</sup> We are indebted to Drs A O Whipple, Walter W Palmer and D B Kirby for their cooperation in permitting us to study the urines of their patients.

ously reported were selected, and twenty-four hour specimens of the urines were tested for melanin by the commonly accepted methods. A proved melanuria was used as the standard for comparison, and most of the

TABLE 1—Fifteen Cases of Melanoma from the Presbyterian Hospital, New York, Over a Period of Ten Years, from 1922 to 1931

Patient	Diagnosis*	Melanuria
P. C.	Melanosarcoma of the neck, liver metastasis	Present
M. R.	Melanocarcinoma of the rectum, metastasis to the regional lymph glands	Absent
W. S.	Melanocarcinoma of the plantar surface of the foot	Absent
S. C.	Melanocarcinoma of the toe	Absent
G. S.	Melanocarcinoma of mammary origin	Present
I. G.	Melanocarcinoma of the buttock	Absent
A. S.	Melanocarcinoma of the anterior crural region	Absent
M. P.	Melanocarcinoma of the forearm with metastasis	Absent
R. R.	Melanocarcinoma of the dorsal surface of the thumb	Absent
J. S.	Melanosarcoma of the buttock with metastasis	Absent
A. V.	Metastatic melanocarcinoma of unknown origin	Absent
D. L.	Melanosarcoma of the left axilla with metastasis (metastatic tumors showed no pigment)	Absent
C. H.	Melanosarcoma of the choroid with metastasis to the liver	Present
S. E.	Melanosarcoma of the choroid with metastasis to the liver	Present
C. T.	Melanocarcinoma of the index finger	Absent

\* The diagnosis in every case was confirmed by biopsy

urines were tested repeatedly by one or more of the several tests. Table 2 illustrates our observations.

The tests used in our study were chosen because they are most commonly employed for the identification of melanin in the urine. The ferric chloride reaction<sup>3</sup> for melanin yielded many confusing results which, were a standard for comparison not available, might be interpreted as positive.

The addition of ferric chloride to a urine that has become alkaline frequently produces a black or brown precipitate. Certain drugs that are excreted in the urine combine with ferric chloride and give misleading color reactions. Bromine water<sup>4</sup> and lead acetate<sup>5</sup> were less variable, but nevertheless inconsistencies occurred. The epinephrine test<sup>6</sup> has obvious pitfalls, in that the addition of alkali to epinephrine is of itself sufficient to form a melanin. The test of Medes and Berglund<sup>7</sup> is applicable mainly when considerable amounts of melanin are being excreted. De Jong<sup>8</sup> states that the addition of an oxidizing agent yielding a dark precipitate is unreliable and proposed the use of lead acetate, which for laboratory analysis seems very satisfactory.

All workers are in accord that the constant characteristics of melanin are its black or brown color, its solubility in alkali, and its insolubility in acid, ether or chloroform.

Our results with these various tests showed so marked a lack of agreement that a procedure comprising the essential features of concentration, precipitation and resolution was adopted. The test is as follows:

1. A twenty-four hour specimen of urine is evaporated to one fourth of the original volume.

2. One gram of potassium persulphate is added for each hundred cubic centimeters of the concentrated urine.

3. Helman D. Beitrage zur Kenntnis der Melanine. Centralbl. f. inn. Med. 23: 1017, 1902.

4. Peters J. P. Melanuria Without Melanosarcoma. Arch. Int. Med. 32: 117 (Nov.) 1923.

5. De Jong, H. H. Vander Zoo. Een Waarschuwing Bij Het Zoeken naar Melanine en Haematoporphyrine in de Urine. Nederl. Tijdschr. v. Geneesk. 69: 598, 1925.

6. Csaki L. Untersuchungen uber stoffbildende Fermente in einem Falle von Melano-arkmatosis. Ztschr. f. d. ges. exper. Med. 29: 1922.

7. Medes C. and Berglund Hilding. Improved Method for the Extraction of Melanin from Human Urine. Proc. Soc. Exper. Biol. & Med. 25: 6 (May) 1928.

3. At the end of two hours, an equal volume of absolute methyl alcohol is added. The precipitated melanin is allowed to settle.

4. The precipitate is filtered off and washed with water till the washings are colorless, then washed with methyl alcohol, to remove any soluble pigments remaining. Finally, it is washed with ether. If the test is positive, there remains on the filter paper a brownish black precipitate, which can be dissolved off with alkali—most conveniently with 5 per cent sodium hydroxide. Acidification of the alkaline solution causes a reprecipitation of the melanin.

To determine quantitatively the amount of melanin excreted, the four steps just indicated are carried out, including the solution of the melanin in 5 per cent sodium hydroxide. The latter solution is made up to a definite volume, and an aliquot portion is taken and acidified with tenth normal hydrochloric acid. This is filtered on a weighed filter paper, then washed with water till all the acid is removed and dried, weighed and the total excretion calculated.

In our hands this test gave positive reactions only in cases of a melanotic malignant growth with metastatic involvement of the liver. Six cases of melanocarcinoma and melanosarcoma were followed over a period of two years. Melanuria was present in three of these patients from the time of operation, the other

TABLE 2—Result of Four Tests Made of Urine

Diagnosis	Number of Cases	Ferric Chloride Test	Bromine Water	Lead Acetate	Potassium Persulphate
Nonmelanotic but advanced carcinoma and sarcoma	65	Positive 16 Negative 49	2 63	1 64	5 60
Advanced nephritis	4	Positive 1 Negative 3	0 4	0 4	0 4
Severe diabetes mellitus	0	Positive 1 Negative 8	0 9	0 9	0 9
Advanced exophthalmic goiter	3	Positive 3 Negative 0	2 1	0 3	0 3
Pernicious anemia	17	Positive 3 Negative 14	2 15	0 17	0 17
Leukemia	8	Positive 2 Negative 6	0 8	0 8	0 8
Severe secondary anemia	3	Positive 0 Negative 3	0 3	0 3	0 3
Addison's disease	1	Positive 0 Negative 1	0 1	0 1	0 1
Melanotic tumors	6	Positive 3 Negative 3	3 3	3 3	3 3
Melanosis coli	1	Positive 0 Negative 1	0 1	0 1	0 1
Severe sunburn	3	Positive 0 Negative 3	0 3	0 3	0 3
X-ray burn	1	Positive 0 Negative 1	0 1	0 1	0 1
Advanced liver destruction	2	Positive 1 Negative 1	0 2	0 2	0 2
Phenol poisoning	2	Positive 0 Negative 2	0 2	0 2	0 2
Pregnancy	4	Positive 0 Negative 4	0 4	0 4	0 4
Pigmented moles	7	Positive 0 Negative 7	1 6	0 7	0 7
Normal Negroes	10	Negative 10	10	10	10
Pneumonia	4	Negative 4	4	4	4
Jaundice obstructive and nonobstructive	12	Positive 4 Negative 8	2 10	1 11	0 12
Tumors of the eye other than melanosarcoma	7	Negative 7	7	7	7

patients never excreted melanin or its precursor in the urine. The three cases in which the urines were consistently negative for melanin were associated with extensive local lesions and many peripheral metastases, but neither at operation nor at autopsy could liver metastasis be demonstrated. Our observations appear

to corroborate a statement, made by Eppinger<sup>8</sup> in 1910, that only when there is a metastatic involvement of the liver does melanin appear in the urine. Although this observation is of the utmost clinical significance, little notice has been taken of it.

#### CONCLUSION

1 Melanuria is a rare finding, even in melanotic malignant tumors.

2 Many tests give pseudoreactions, difficult of interpretation.

3 A simple test is suggested, which in our hands never yielded confusing end-results.

### Clinical Notes, Suggestions and New Instruments

#### A CASE OF LARGE NONMALIGNANT GASTRIC ULCER AND A CASE OF LARGE DUODENAL ULCER WITH FATAL HEMORRHAGE

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CINCINNATI

Crohn<sup>1</sup> states that "the average size of a gastric ulcer is 2-3 centimeters in diameter, although it is not unusual to find an ulcer 4-6 centimeters in width." He describes an ulcer which "eroded nearly the entire posterior wall of the stomach so the palm of the hand laid on it covered it with difficulty." Alvarez and MacCarty<sup>2</sup> state from their own data that on the basis of size alone if an ulcer is larger than a dollar, it is almost certainly a cancer. Peabody<sup>3</sup> described a gastric ulcer measuring 19 by 10 cm.

Duodenal ulcers, according to Crohn, average 0.5 by 1 cm in diameter. He describes a duodenal ulcer measuring 8 by 3.5 cm in diameter which had penetrated through the base of the duodenum in its entire length, exposing the pancreas and causing a fatal erosion of the superior pancreaticoduodenal artery.

We report a case of gastric ulcer in which the ulcer measured 6 by 11 cm in diameter and which showed no malignant changes, and a case of an unusually large duodenal ulcer, measuring 2.5 by 5 cm.

#### GASTRIC ULCER

The first patient was a white man, aged 58, who entered the hospital early on the morning of Jan. 22, 1932. He complained of bleeding from the stomach. The night before admission he had suddenly vomited about a quart and a half of bright red blood. Small amounts of blood were vomited during the night and he complained of tearing pains throughout the abdomen.

For the past thirty-three years he had suffered from an aching or "tearing" pain in the epigastrium. This was localized and it appeared about two hours after each meal and during the night. Baking soda and food afforded relief. He frequently vomited sour material after meals and described some of the material as resembling "coffee grounds." The attacks of pain occurred chiefly in the spring and fall, with almost complete freedom in the winter and summer. His appetite was good, there was some fear of eating and the symptoms were aggravated by eating sour foods. His bowels were usually constipated, and he stated that his stools were tarry at intervals for six months before admission. He had lost approximately 40 pounds (18 Kg.) in the last year.

On admission the patient appeared critically ill, undernourished and anemic. The temperature was 95 F., the pulse rate 104, and respirations 36. He was restless but rational and cooperative. The skin and mucous membranes were very

pale. Dried blood was seen in the pharynx. The lungs were clear. The heart was not enlarged, the sounds were distant. The systolic blood pressure was 74, the diastolic blood pressure could not be obtained. The abdomen was below the chest level and generalized tenderness was present, but no masses or solid organs could be felt. The red blood count was 1,200,000, hemoglobin, 25 per cent (Sahli). The white blood count was 27,000, lymphocytes, 8 per cent, mononuclears, 25 per cent, neutrophils, 89.5 per cent. The blood Wassermann reaction was negative. He was given supportive treatment for gastric hemorrhage but failed to respond and died within twenty-four hours.

The stomach at autopsy had a large ulcer on the lesser curvature. This measured 6 by 11 cm and extended to within 2 cm of the pylorus (fig. 1). There had been a subacute perforation with the pancreas presenting posteriorly and the liver anteriorly, fibrous adhesions to these viscera preventing the escape of gastric contents into the abdominal cavity. There was 1,500 cc of partially clotted blood in the stomach. Blood was present also in the enteric tract, with dark discoloration of the mucosa. There were many small hemorrhagic areas around the edge of the large gastric ulcer, some of which were easily demonstrated as representing fairly large vessels. The edges of the ulcer were distinctly indurated and had a thickness of about 1 cm. Section of the ulcer revealed dense fibrous tissue extending into the pancreas and the liver.

The pathologic diagnoses were massive gastric ulcer, chronic, with no evidence of neoplasm, terminal hemorrhage into the



Fig. 1 (case 1)—Gastric ulcer

gastro-enteric tract, subacute perforation with fibrous adhesions to the liver and pancreas, far advanced atherosclerosis of the aorta with calcification, myocardial fibrosis.

#### DUODENAL ULCER

The second patient was a white man, aged 64, who entered the hospital, May 3, 1932, complaining of stomach trouble. The onset of his present illness began six weeks before admission with a severe persistent epigastric pain, nausea and vomiting about fifteen to twenty minutes after meals, loss of appetite, and hiccuping. The bowels were constipated during that time and the stools were black. There was no history of hematemesis. He lost 30 pounds (13.6 Kg.) during the illness. He stated that thirty years before he was treated for peptic ulcer and was in a hospital nine months at that time. He experienced no other symptoms of ulcer between the first and last attacks.

The patient appeared acutely ill. The skin was loose and flabby, without eruption. There was no icterus. The fundi

<sup>8</sup> Eppinger, Hans. Ueber Melanurie. *Biochem. Ztschr.* 28: 181, 1910.

From the Department of Internal Medicine and the Department of Pathology, University of Cincinnati College of Medicine.

<sup>1</sup> Crohn, B. B. *Affections of the Stomach*. Philadelphia: W. B. Saunders Company, 1927, pp. 564-547.

<sup>2</sup> Alvarez, W. C., and MacCarty, W. C. *Staff Meetings of Mayo Clinic* 3: 127 (April 18), 1928.

<sup>3</sup> Peabody, F. W. quoted by Osler, William. *The Principles and Practice of Medicine*. D. Appleton & Co., New York, 1926.



showed evidences of arteriosclerosis. The heart and lungs were normal. The pulse rate was 108, the rhythm regular. The blood pressure was 170 systolic, 90 diastolic. The peripheral vessels were thickened. The abdomen was below the chest level and there was extreme tenderness over the right epigastric region. The rectus muscles were so tense that nothing could be learned by abdominal examination. Rectal examination was negative.

The course of his illness was steadily downward. May 7, he vomited a great deal of dark brown bloody material and died a few hours later.



Fig 2 (case 2)—Duodenal ulcer

The red blood count was 3,800,000, hemoglobin, 65 per cent (Tallqvist), white blood count 13,600, lymphocytes 18.5 per cent, mononuclears, 35 per cent, neutrophils, 78 per cent. The urine was practically normal and was amber colored. The blood Wassermann reaction was strongly positive.

At autopsy the entire gastro-enteric tract was distended and found to be filled with dark reddish 'coffee grounds' material. A mucoid lining overlay the entire gastric mucosa. A large oval ulcer was present in the duodenum 1 cm from the pyloric ring. It measured 2.5 by 5 cm and its edges were distinctly indurated. One definite bleeding point was demonstrated. On section the base of the ulcer was found to be the pancreas. Scar tissue was prominent and was invading the pancreas. No evidence of neoplasm was demonstrated.

The pathologic diagnoses were chronic duodenal ulcer with terminal hemorrhage, subacute perforation of duodenal ulcer with marked scarring involving the pancreas and adjacent viscera, focal area of cerebral softening, chronic pancreatitis with fibrosis, generalized arteriosclerosis.

#### COMMENT

It is interesting to note the probable long duration of the lesion in both cases described. In one the symptoms had a duration of thirty-three years, while the second patient had received treatment for ulcer thirty years prior to his admission. Both patients also presented advanced arteriosclerosis. In each, unusually large ulcers were found. Whether arterial changes and the unusually long duration of symptoms may have been factors in the size of the ulcers is of course not known.

#### FOREIGN BODY IN DUODENUM REPORT OF CASE AND METHOD OF REMOVAL

SIDNEY W. RAYMOND, M.D., CHICAGO

On April 1, 1932, a white girl, aged 14 months, swallowed a "Bobby Pin." A roentgenogram of the abdomen showed the pin lying in the fundus of the stomach. The child was placed on a diet consisting mainly of vegetables and citrus fruit pulp.

The next day another roentgenogram showed the foreign body in what was believed to be the first part of the duodenum. The roughage diet was continued as before.

A picture on the second day revealed the foreign body to have passed to a position corresponding to the second or descending portion of the duodenum. Further progress was not expected, as the pin was 2 inches long and the duodenal curve in an infant is very short. A picture made twenty-four hours later showed no further movement. At this time surgical intervention was advised but was refused by the parents.

I did not see the child again until May 23, 1932. The child had made a normal gain in weight, she had a good color, her appetite was good and the bowels were regular. She had had a mild infection of the upper respiratory tract about two weeks previously, and this had lasted a few days. The position of the pin had been checked by semimonthly fluoroscopic examinations and its position was unchanged. Operation for removal was then performed.

#### OPERATION

Previous to operating, a pin of the same kind and size was found to slide with moderate ease into the side opening of a number 20 (F) catheter. When it was entirely within the tube, the closed end straightened out and prevented the enclosed object from being withdrawn except with difficulty.

Under ether anesthesia an upper right rectus incision was made. The pin was easily palpable in the duodenum, and it was freed and "milked" up to the stomach. Through the thin wall of the stomach the pin was easily placed point first inside the catheter, the same as in the practice test. It was then brought out through the mouth with the head in the extended position.

The abdominal wall was closed without drainage. Three hundred cubic centimeters of physiologic solution of sodium chloride was given subcutaneously, and liquids were given by mouth as soon as vomiting had ceased. In forty-eight hours the usual diet was given.

Recovery was uneventful except for a sore throat, which developed on the fifth day and cleared up on the seventh. The child was discharged on the eighth day and has been well since.



Position of pin forty eight hours after ingestion, when its progress had been arrested at the sharply curved second portion of the duodenum.

#### COMMENT

This case is reported because of inability to cause the foreign body to pass by the use of roughage, and also because the method employed avoided opening the gastro-intestinal tract. Opening a hollow viscus in the infant, especially the duodenum, is accompanied by a high mortality, and for this reason a method was sought which would make the removal safer.

This method has been tried by me only in this one case, but it could also be applied to other foreign bodies, such as wire, nails, common pins and safety pins. The size of the catheter or stomach tube employed would of course be governed by the requirements.

6024 West North Avenue.

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT  
H. A. CARTER, Secretary

### SIRIAN ULTRAVIOLET LAMP NOT ACCEPTABLE

The Sirian Ultraviolet Lamp, sold by the Arcturus Radio Tube Company in Newark, N. J., resembles an ordinary incandescent lamp having a tungsten filament enclosed in a glass bulb that transmits the ultraviolet radiations of wavelengths longer than 2,800 angstroms. According to an advertising folder the Sirian Ultraviolet Lamp is made in four sizes, 60 watts, 100 watts, 150 and 300 watts.

The ultraviolet radiation output of wavelengths less than 3,130 angstroms emitted by the Sirian Lamp (150 watts) is too small to be measured by the radiometric procedure. In the Council test a Rentschler photocell of uranium, which is sensitive to wavelengths less than 3,340 angstroms, was calibrated against the Bureau of Standards standard instruments by using the sun as a source. At 9:35 to 9:50 a. m. of a clear day, Oct. 11, 1932, the ultraviolet radiation intensity was 43 microwatts per square centimeter where the average summer (June) midday intensity would have been 90 microwatts per square centimeter.

Because of the low ultraviolet radiation intensities emitted, the measurements were made at a distance of only 4 inches (10 cm.) below the glass bulb. In view of the large amount of infra-red radiations emitted by the lamp, the heat on the skin will probably not permit operation of the lamp at a much closer distance than 4 inches.

The following results were obtained at a distance of 4 inches or about 10 cm. from bottom of bulb:

#### Comparative Intensities of Sun and Sirian Lamp

	U V Q in $\mu\text{W}/\text{cm}^2$
Sirian U V Lamp, 120 volts and 150 watts	0.45
The Sun as observed at 9:53 a. m. Sept. 11, 1932	43.00
U V Q being ultraviolet intensity and $\mu\text{W}/\text{cm}^2$ being microwatts per square centimeter	

The measurements on this lamp reveal a little ultraviolet radiation of wavelengths between 3,130 and 3,340 angstroms not generally considered useful for therapeutic purposes.

In order to comply with the minimum specifications of the Council (THE JOURNAL, March 26, 1932, p. 1082, July 9, 1932, p. 125), the erythemogenic equivalent of this type of lamp would be 130 microwatts per square centimeter, while for the sun it is 90 microwatts per square centimeter.

The ultraviolet radiation intensities available appear to be only from one fiftieth to one one hundredth of the requirements of the Council on Physical Therapy.

The test on this lamp was made without a reflector. It is probable that if an efficient reflector was used the intensity might perhaps be increased by a factor 5, but further considerations would have to be given to heat tolerance and ventilation at this short distance.

The Arcturus Radio Tube Company, Newark, N. J., apparently recommends the use of its lamps in all types of reflectors and in many cases, it seems, pays no attention whatever to the fact that glass, parchment and parchment lamp shades do not reflect any appreciable amount of antirachitic ultraviolet radiations.

As an illuminant, however, this lamp appears satisfactory while it lasts. The tungsten filament is heated to a higher temperature, the purpose of which is to increase the ultraviolet output.

In the small pamphlet called "Sirian Ultraviolet Light 'A Little Sun in Each Lamp,'" there appear certain objectionable phrases as "healthful tonic," "health-giving energy," and "builds up resistance to disease." Promotional advertising matter of this kind, containing the aforementioned objectionable phrases, is bound to be misleading and in effect constitutes an appeal to the public for arguments which are unscientific and may harmfully enhance the feeling of false security on the part of the public.

The Council on Physical Therapy declares the Sirian Ultraviolet Lamp ineligible for inclusion in its list of acceptable devices because (first) the intensity of ultraviolet energy is

too low to meet the minimum specifications of "Ultraviolet Radiation Useful for Therapeutic Purposes—Specification of Minimum Intensity or Radiant Flux. Second Communication" (THE JOURNAL, July 9, 1932, p. 125), and (second) the aforementioned health claims recorded in the concern's advertising matter and descriptive literature are unwarranted.

## Committee on Foods

### REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS  
RAYMOND HERTWIG, Secretary

#### Acceptance Withdrawn

#### KIDDIE KANNED SIEVED FOODS—SIEVED VEGETABLES, FRUITS AND SOUPS (SIEVED FOODS FOR INFANT AND INVALID FEEDING)

Manufacturer—Kiddie Kanned Foods, Inc., Seattle

The manufacturer has ignored requests for the required information and data for these foods which are now being called for by the Committee under its present Rules and Regulations for all accepted foods. The information of the former submission of these foods is not sufficiently comprehensive to give assurance that they meet the Committee requirements for this type of products as defined by the published General Committee Decision "Vitamin and Mineral Content of Sieved Fruits or Vegetables Recommended for Infants, Children and for Special Diets." The acceptance of these Kiddie Kanned Foods and the privilege of use of the Committee seal or statements of acceptance on the labels and in the advertising, therefore, are being withdrawn.

#### Acceptance Withdrawn

#### SAC-A-RIN BRAND OF CANNED VEGETABLES (PACKED WITHOUT ADDED SALT OR SUGAR)

Manufacturer—Kings County Packing Company, Ltd., Oakland, Calif.

The manufacturer has not provided the required information and data for these foods which are now being called for by the Committee under its present Rules and Regulations for all its accepted foods. Therefore, the acceptance for these Sac-A-Rin Brand of Canned Vegetables and the privilege of use of the Committee seal or statements of acceptance on the labels and in the advertising are being withdrawn.

#### KRINKO Choice Table Wheat NOT ACCEPTABLE

The Wheat Krinkler Corporation, Columbus, Ohio, submitted to the Committee on Foods a packaged, cleaned and scoured soft red winter wheat called "Krinko Choice Table Wheat."

*Discussion of Advertising*—The advertising accompanying the submission was adjudged in gross violation of the Committee's policies and principles for good advertising. The company was advised of the Committee's recommendations and agreed to revise the advertising. Proof of a revised advertising booklet "Variety, Economy, Health" was criticized but many of the recommendations and criticisms were ignored in the printed copy, which in considerable part is still misleading, misinformative and deceptive.

The revised booklet represents an apparent attempt to induce the belief that health is attained and maintained only by a diet composed of foods in their natural state. The sense of the entire booklet is exemplified in the introductory claims that "present day research for foods reveals that many of our illnesses can be traced to highly processed devitalized foods robbed of health giving proteins, vitamins, mineral oils and salt [and] one of the foods that has been abused the most is wheat. In its natural state wheat contains every

element in the human body, making it as well balanced a food as any produced." These incorrect statements are given as scientific deductions and are especially misleading because of their seeming plausibility to the uninformed. The copy continues in this sense to extol the virtues of whole wheat frequently at the expense of scientific fact to uphold the argument. It is stated that "there is now no secret about its [wheat's] nutritional superiority over most foods" there was, quite likely, more energy and resistance to disease stored in the few grains some Pharaoh munched than in the daily portion of the highly-milled wheat we have been accustomed to eating."

It is claimed that "until recently [it] has not been practical to get all the goodness from wheat. But now through a simple device called the Wheat Krinkler you can enjoy the full benefits of natural wheat." It is alleged that "mills remove parts of wheat so vital to taste and health. Simply because these parts will not keep after the wheat kernel is broken," either ignoring or being ignorant of the fact that bran and wheat germ by-products of flour milling keep satisfactorily if properly stored. It is incorrectly claimed that "wheat turns rancid in a short time" after the skin has been broken." The claim that "most of the iodine is also removed" does not recognize that the iodine content of most wheat is too low to have significance for meeting nutritional iodine needs. It is stated that "only the inferior starchy portion is left" in flour, why it is rated "inferior" is not stated. An unnamed food expert is claimed to state "eating devitalized, milled wheat is like eating scrap beef and throwing away the luscious, nourishing cuts." The argument continues in this vein to misuse or misstate facts to convince the reader that Krinkled Wheat prepared by grinding in the special grinder "Wheat Krinkler" sold by the purveyor will accomplish many health benefits implied or stated in the advertising.

The advertising is replete with vague statements, such as "most people are astonished to learn that wheat contains all the sixteen elements comprising the human body," which both confuse and mislead the uninformed. Many of these elements are present in insufficient quantity to be of any nutritional significance. It is alleged that Krinkled Wheat includes the "delicate and easily digested mineral salts so vital for growth, nourishment and repair of tooth, hair and bone structure and tissue." The writer is apparently unaware of scientific nutritional facts that wheat minerals are not of value for tooth and bone structure. It is incorrectly alleged that "it is because wheat and only wheat as in Krinkled form contains vitamins A, B, E and G that it is often called one of the basic foods around which other foods furnish supplemental assistance" and that "Krinkled Wheat with milk or cream gives you all the vitamins A, B, C, D, E and G." Vitamins C and D are practically lacking in this mixture. It is stated that Krinkled Wheat contains "oily bran" the lubricating roughage so necessary for the complete cleansing of the intestinal tract" and that this "oily bran of Krinkled Wheat is entirely different from the harsh, dry bran that suffers a loss of fresh oil in storage." The bran of wheat is not "oily" nor "lubricating", the bran of Krinkled Wheat is not different from dried bran. It is stated that "many of our off days and periods of impaired vitality are due to unbalanced diets of ready-prepared foods of doubtful nutritional value. Correction does not lie in freakish diets and expensive fads, but often in a return to natural foods like Krinkled Wheat. Don't take tonics and patent medicine preparations you know nothing about, include Krinkled Wheat in your menu. It should give you new vigor new energy and increased mental efficiency. It should help banish that sluggish feeling and tendency to tire easily. You should sleep better and discover your recuperative powers are stronger." It is by fanciful misleading claims such as these that the advertising attempts to contribute quasimedical or therapeutic properties and specific health values to Krinkled Wheat. The reader is cautioned however, that "there is no substitute for Krinkled Wheat. Never use whole wheat flour cracked wheat or dry bran in these recipes, as results will be disappointing." This is an apparent attempt to distinguish Krinkled Wheat from the usual whole wheat products on the market but which are physical and nutritional identities. The deception is made grosser by the claim that "Krinkled Wheat can only be made in the patented device perfected for krinkling." It is not comparable to cracked or broken wheat as prepared by old-fashioned grinders or mills.

This advertising booklet as a whole, directly and by implication, is misinformative and deceptive to the public. This advertising was drawn up with the criticisms and recommendations of the Committee at hand. This Krinkled Wheat, therefore, is not listed among the Committee's accepted foods.

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

### PEERLESS HARD WHEAT FLOUR (BLEACHED)

**Manufacturer**—Collin County Mill & Elevator Company, McKinney, Texas

**Description**—A "standard patent" hard wheat flour, bleached.

**Manufacture**—Selected wheat is cleaned, washed, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and with nitrogen trichloride ( $\frac{1}{40}$  ounce per barrel).

**Analysis** (submitted by manufacturer) —

	per cent
Moisture	12.5 - 14.0
Ash	0.39 - 0.42
Fat (ether extraction method)	0.8 - 1.2
Protein (N $\times$ 5.7)	11.4 - 12.0
Crude fiber	0.2 - 0.4
Carbohydrates other than crude fiber (by difference)	74.7 - 72.0

**Calories**—3.5 per gram 99 per ounce.

**Claims of Manufacturer**—This flour is intended for commercial bread baking.

### PENNANT SORGHUM FLAVORED SYRUP (A Blend of Corn Syrup and Pure Country Sorghum Syrup)

**Distributor**—Union Sales Corporation, Columbus, Ind.

**Description**—A table syrup, corn syrup flavored with sorghum syrup.

**Manufacture**—The corn syrup ingredient is prepared as described for Pennant Crystal White Syrup (THE JOURNAL, Jan 30, 1932, p 402). The sorghum syrup is prepared from sorghum cane. The cane is harvested and delivered to the mills, the heads are cut off, the leaves and stalks are separated in a cleaning machine. The stalk so obtained is crushed and macerated. The expressed juice is collected in tanks, partially neutralized with lime, heated to boiling, and filtered. During the process, the juice is changed from a greenish foamy liquor to a brilliantly clear amber colored solution, which is subsequently concentrated in "vacuum" evaporators to a syrup of standard density.

The corn syrup and sorghum syrup are mixed and heated at 70 C and automatically packed in friction top tins.

**Analysis** (submitted by manufacturer) —

	per cent
Moisture	23.5
Ash	1.7
Fat (ether extract)	0.0
Protein (N $\times$ 6.25)	0.0
Reducing sugars as dextrose	0.3
Reducing sugars as dextrose after acid hydrolysis	34.6
Reducing sugars as dextrose after invertase inversion	66.6
Sucrose, by invertase method	41.2
Total carbohydrates (by difference)	8.4
Titrate acidity as HCl	74.5
Sulphur dioxide as SO <sub>2</sub>	0.1
pH	0.002

58

No methods are available for accurately determining the composition of syrups of this nature, therefore the foregoing analysis is roughly approximate.

**Calories**—3.0 per gram 83 per ounce.

**Claims of Manufacturer**—A syrup for all cooking baking and table uses.

# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 4, 1933

## DIURNAL VARIATIONS IN EFFICIENCY

A number of standards of performance or function on the part of the body have been accepted as indexes of its normality. Perhaps the most noteworthy illustration is found in the normal body temperature. This is something that can be readily measured with comparative accuracy, and departures from the expected figures are among the fundamental physical signs of disease. Body temperature, however, even in admittedly perfect health, is subject to characteristic slight diurnal variations that cannot be directly correlated with changes in the environment. The temperature of man reaches a maximum at about 4 or 5 p. m. (37.5 C, or 99.5 F) and a minimum at about 3 a. m. (36.8 C, or 98.2 F), at a time when the bodily functions are least active. It has been observed that if the habits of man are altered so that he sleeps during the day and works during the night, the character of his diurnal temperature variation is altered and the periods of maximum and minimum temperatures become inverted.

Habits of sleep also exhibit a diurnal character. The most essential factor in causing sleep seems to be muscular relaxation, this causes a loss of proprioceptive reflexes that in activity are always functioning. Kleitman,<sup>1</sup> one of the foremost students of the subject, insists that anything that will produce muscular relaxation will lead to sleep. In the summertime there is a disinclination to engage in muscular activity because it produces warmth. One is therefore more inclined to relax the musculature and can fall asleep with ease at almost any time of the day. Kleitman remarks, by way of illustration, that a warm stuffy atmosphere of a lecture room, especially if the chairs are comfortable, frequently produces sleep in some auditors, sometimes to their embarrassment. The percentage of sleepers increases if the lecturer's voice is monotonous and if the room is darkened for lantern slide projection. In explanation of the customary incidence of diurnal sleep, Kleitman believes that the cycle of day and night serves to develop in animals and man what Pavlov calls a

"natural" conditioned reflex. Darkness makes for poor vision and discourages movements. This leads to inactivity and relaxation, and sleep follows. Repeating this performance a great many times results, according to Kleitman, in the establishment of a conditioned reflex of a temporal character—relaxation at a certain time. Likewise, waking may be developed into a time-conditioned reflex. It is further averred that children are born into a social organization where diurnal sleep is the universally accepted mode of sleeping. The first habit that the mother tries to develop in a baby is that of an unbroken night's sleep. As he gets older, other functions develop a periodicity that coincides with the enforced sleep periodicity. For instance, a temperature curve develops, with a minimum at night, and produces a disinclination to night activity. Even the modest tear apparatus, Kleitman points out, stops its function at bedtime, producing dry eyes and favoring their closure. Kleitman feels certain that, under conditions of artificial illumination and twenty-four hour activity of a group, children brought up by that group could be trained into a twelve or a thirty-six hour cycle of existence, instead of the present twenty-four.

The foregoing considerations prompt one to ask whether there are other human activities that show a diurnal variation concomitant with that of the twenty-four hour cycle of sleep. In an investigation recently reported from the University of Chicago,<sup>2</sup> a number of adult persons were subjected to several simple tests at different times of the day, and variations in performance were noted as regards the length of time required to carry out a certain task, or the number of errors made in a definite period of time, or both. The tests were made five times daily, for at least twenty days. The results obtained indicate a well marked variation in performance during the day, efficiency of performance increasing up to noon or afternoon and then declining for the rest of the waking period. The body temperature varies in the same sense. There are indications that the temperature is dependent on the tonus of the skeletal muscles, in that it falls on lying down and rises on getting up. Kleitman adds that, if the variations in temperature can be used as a criterion of changes in tonicity of the body musculature, it would appear that the gradual decrease in efficiency toward the end of the day might be due to greater muscular relaxation, which leads to a decrease in the number of proprioceptive impulses reaching the cerebral cortex and makes it increasingly difficult to maintain the state of wakefulness, irrespective of whether or not any fatiguing work was done during the day. It is hardest to keep awake during the early hours of the morning when the body temperature is lowest. Under ordinary conditions, Kleitman concludes, going to bed in the evening results in a still greater muscular relaxation, and sleep is precipitated. After all, these phenomena of human

<sup>2</sup> Kleitman, Nathaniel. Diurnal Variation in Efficiency, *Science* 76: 570 (Dec. 16) 1932.

<sup>1</sup> Kleitman, Nathaniel. Sleep, *Physiol. Rev.* 9: 624 (Oct.) 1929.

physiologic behavior are familiar from practical experience. What one fails to remember is that work and weariness play a part in determining human efficiency in a way that the individual worker—notably the intellectual worker—all too often forgets.

### RUSSIAN EXPERIENCES WITH LEGALIZED ABORTION

Russian experiences with legalized abortion as reflected in the First All-Ukrainian Congress of Gynecologists and Obstetricians, meeting in Kiev from May 23 to 28, 1927, do not seem to have been refuted or challenged by more recent reports emanating from the same sources. Verkhratskiy,<sup>1</sup> for example, in 1931 reported 13.5 per cent instances of adnexal complications in his material of 1,242 artificial abortions. Anufrieff,<sup>2</sup> in 1931, quoted the figures presented at the congress to support his thesis that curettage of the uterus is a procedure fraught with serious consequences. The unbiased and objectively scientific attitude of the congress toward the question seems apparent.

The law legalizing economic indications for abortion in the new Russia was intended to do away with criminal abortion and to substitute for it efficient medical service. The hope was expressed at the time that instruction in measures for contraception would minimize the demand for abortion. It was further hoped that improvement in living conditions would tend to reawaken desire for children. Legalization of abortion, therefore, was to be regarded as a temporary measure. The economic justification for interruption of pregnancy was to be decided in each case by a special committee on abortion. The diagnosis was to be based on physical examination and not alone from a history. Abortions were not to be performed after the first three months of a pregnancy. The method adopted was dilation of the cervical canal with Hegar sounds and curettage of the uterine cavity.

Cervical tears and ectropion of the cervical mucosa were the most frequent complications. Perforations of the uterus occurred in only 0.04 per cent of the cases, and 75 per cent of the patients recovered with conservative treatment. In a total of 1,815 abortions there were thirteen fatalities, 0.7 per cent a greater mortality than that which obtains in normal labor. The principal cause of death was infection. The occurrence of mild fever was noted quite commonly. Its incidence was noted more frequently when the hospitalization period was raised from three to five days. Many of the patients discharged returned several days later with severe infections. The cause of sepsis was ascribed to scraping. New infections were caused by lighting up of old infections left by previous abortions. General sepsis was four times as frequent after repeated

abortions as after one abortion, and adnexal inflammation twice as frequent. A definite increase was noted in gonorrheal infections. Another bad result of curettage was the retention of a part of conception, causing bleeding. Among the remote results, scars of the internal os led to dysmenorrhea, to stasis of menstrual blood in the tubes, and occasionally to external adenomyosis. Scars in the uterine wall could lead to a rupture in a subsequent pregnancy. The replacement of normal uterine mucosa by scars was responsible for oligomenorrhea in 74 per cent of the cases and for amenorrhea in 10 per cent, as well as for secondary sterility or habitual abortion.

Serdukov pointed out the deleterious effect of sudden loss of decidual secretion on the ovaries and the uterus. He found in the ovary a disturbed follicle function, cystic degeneration, parenchymatous atrophy and thickening of the tunica albuginea. Particularly interesting were the instances of uterine atrophy as well as of uterine hyperplasia.

Inflammatory sequelae were both numerous and various. Abortion was named as the cause in 20 per cent of cases of parametritis and adnexitis. Of 264 patients operated on for inflammatory lesions, 36.3 per cent had a history of abortions. The incidence of secondary sterility after induced abortions was 5.4 per cent. The incidence of extra-uterine pregnancy was considerably raised. According to Kirillov there were 59 tubal pregnancies following 3,790 abortions, or 1.3 per cent. Quite significant was the effect on later pregnancies. Postpartum fever occurred in 32 per cent, as contrasted with 9.5 per cent in cases in which abortion had not been performed. Duration of labor was prolonged over the normal, the period of placental expulsion was likewise much longer. Incomplete placenta, manual removal of the placenta, and placenta praevia were much more frequent. Postpartum hemorrhages were noted from five to six times as frequently, retention of membranes and subinvolution from two to three times as frequently. An increase in stillbirths was likewise recorded.

In addition to the purely local lesions, several authors emphasized certain general somatic and psychic deleterious effects. They maintain that a sudden disturbance of the functions of the ovary, the corpus luteum and the placenta constitutes a pronounced biologic trauma to the entire organism. The loss of the impulse to growth and attainment of complete sexual characteristics caused by the first pregnancy is of particular importance to the infantile and hypoplastic types. Among the psychic disturbances were noted depression, hysteria, frigidity, dyspareunia and marital discord. The following were among the more pessimistic utterances: "Chronic inflammations of the uterus and the adnexa, as well as abortions without an end, is the heritage of these years." "There is no disease of the female in the causation of which abortion does not play an important

<sup>1</sup> Verkhratskiy, S. Immediate and Remote Results of Interruption of Pregnancy in Villages. *Vrach delo* 11: 17 (Jan. 31) 1931.  
<sup>2</sup> Anufrieff, A. The Question of Ambulatory Abortion. *Vrach gaz.* 1931, 21: 1931.

rôle" "When we report 140,000 abortions a year, we report just that many women on the road to invalidism" Some warn against normal deterioration and "sexual chaos" The "abortarium" was no boon to general health The consensus regarded legalized abortion as a psychic, moral and social evil The congress passed a resolution warning the rest of the country against regarding lightly a procedure fraught with such injurious effects Worst of all, criminal abortion was far from being suppressed

## Current Comment

### JERUSALEM ARTICHOKE

Recognizing that people at present are diet minded, many advertisers are concentrating on the promotion of foods Among other items is the jerusalem artichoke The *Pittsburgh Medical Bulletin*<sup>1</sup> calls attention to a newspaper advertisement describing artichokes as "The new and only non-starch vegetable garnish for your Thanksgiving turkey Highly recommended for diabetic and reducing diets" Inquiries have been received from localities widely separated regarding the virtue of the jerusalem artichoke for the diets mentioned The claim has been advanced that the artichoke, though containing 17 per cent carbohydrate, according to the tables published by the United States Department of Agriculture,<sup>2</sup> contains a sugar, inulin, which is peculiarly suited to the needs of the diabetic patient This is a claim which has frequently been made and as frequently exploded for honey, on the ground that levulose is better utilized by the diabetic patient than is dextrose, which, of course, is not the fact The hydrolysis of inulin and its subsequent utilization in the body is no different from that of other sugars, as far as the metabolism of the diabetic patient is concerned As the *Pittsburgh Medical Bulletin* succinctly remarks, "If the doctor will do the prescribing and the grocer will do the selling, this will be a safer and a better world"

### FLORIDA AND FLU

Now that influenza is agitating the public, the Florida promoters of citrus fruits are again in the field with the statement that Florida oranges help keep the flu away The advertising copy asserts that "the most effective way to resist the flu is to build up a strong alkaline reaction in your system—and this is exactly what Florida citrus fruits do!" THE JOURNAL has protested repeatedly against this type of advertising in the health field The California Fruit Growers' Exchange has shown that it is possible to advertise citrus fruits without such misleading statements Indeed, it has constantly cooperated with the Committee on Foods of the American Medical Association in revising the health claims made for California citrus fruits and in avoiding statements without scientific

basis One Florida fruit grower—Howey-In-The-Hills—has, however, at times supported the statement that his grapefruit is a specific for diabetes and the Florida Exchange has constantly urged the drinking of excessive amounts of orange juice from Florida oranges as a preventive of influenza Of course, not all Florida producers of citrus fruits approve these claims The charge must be made specifically against the group in the Florida Citrus Fruit Exchange and the advertising agency that prepares its copy The truth is that a considerable number of physicians believe that mild alkalization aids in the treatment of the common cold and of influenza, but there is not the slightest scientific evidence to support the claim that constant alkalization of the system will prevent influenza There are so many factors involved in infection with this disease that proof is difficult There is, moreover, plenty of evidence to show that people who have been taking considerable amounts of orange juice frequently develop influenza The pity of it is that a fruit of this character, susceptible to such excellent advertising on established facts, should be exploited with advertising that is bound to bring discredit on the product itself because of the disappointment of users when the claims are shown to be untrue

### UNITED MEDICAL SERVICE, INC

True to the prediction made in these columns a few months ago, the business men who established the corporation known as United Medical Service, Inc, began this week full page advertising with an appeal based mainly on price As might also have been anticipated, the advertising leans heavily on the suggestions of the majority report of the Committee on the Costs of Medical Care With characteristic impudence the promoters perverted to their purpose a misquotation from an address delivered to physicians by the secretary of the American Medical Association—much cited by the same committee—no doubt with the idea of lending to the announcement a medical respectability which it cannot have Worst of all, a concluding paragraph of the announcement says

In announcing United Medical Service to the public we wish to emphasize that it is not competitive with existing charitable, philanthropic, educational and tax-supported organizations, or physicians in private practice

This outrageous misrepresentation, like the rest of the announcement, seems calculated to deceive A reputable physician does not advertise The purpose of the advertising on the basis of price appeal must be to attract vast numbers of patients away from their physicians Sooner or later it must be found that assurance of a profit to the business men and commercially minded physicians behind this concern will demand skimping of some services and overselling of other services to the misguided persons who will respond to the advertisement It would be folly to analyze here for the benefit of the public the professional capacity of the staff of the institution It embraces not one name of any note in the field of clinical competence or professional achievement Finally, what assurance has been offered that this commercial

<sup>1</sup> Pittsburgh M. Bull., Dec. 3, 1932, p. 849

<sup>2</sup> Chatfield, Charlotte, and Adams, Georgian. Proximate Composition of Fresh Vegetables, Circular 146, U. S. Department of Agriculture, January, 1931



setup in any way maintains what both the majority and minority reports of the Committee on the Costs of Medical Care recognized as essential in any good form of medical practice—the personal relationship between patient and physician necessary to proper, sympathetic, competent medical care?

## Medical Economics

### NEW FORMS OF MEDICAL PRACTICE

#### 12 Health Preservation Foundation of Los Angeles

This scheme is an outgrowth of the Medical Diagnostic Association, which, according to the statement of the December 1932 Bulletin of the Association, "was organized in 1924, under the name Co-Operative Diagnostic Laboratories, by a group of physicians who felt the need of a jointly owned business-like organization to handle the impersonal phases of their practice.

"Its membership is limited to one thousand, and eligibility to membership in the national medical or dental societies is prerequisite to membership in this Association."

The plan is described in the December 1932 Bulletin as follows

The Organization Committee of the recently formed HEALTH PRESERVATION FOUNDATION at its last meeting arranged a schedule of dues which its lay members will pay for services, and fixed the income limits of eligibility for such service

These dues have been set at sums which will surely attract those eligible and will represent no hardship to them and still will be ample to provide enough funds to recompense the individual members of the professional staff for their services (a fact which has been demonstrated by many years of operation of numberless medical services by fraternal organizations, large corporations etc.)

The income limits chosen are such as to offer no competition with private practice.

The principal objects of the plan are

- 1 To bring back into personal relationship with the doctor (in his own office and hospital) a large and growing percentage of the public now being cared for by other agencies.
- 2 To foster the strictly competitive private practice to medicine and to extend that practice among as large a percentage of the public as may be possible (including the class which is now largely cared for by irregulars and institutions)
- 3 To foster a better public understanding and appreciation of the medical profession and its services to humanity
- 4 To present to the members of the staff (without burden to any of them) opportunity for
  - a. Increased experience.
  - b. More consultation
  - c. That most important factor in building practice, i. e. more grateful patients

#### DUES

The dues' or premiums' for membership are based on the single individual with an income of not more than \$65 00 per month who will pay 75c per month for service. Each additional dependent will increase the premium 50c per month (allowing \$15 00 increase in income limit for each additional dependent)

Single members with monthly income of \$65 00 or less	\$0 75 per mo
Member and one dependent with income of \$90 00 or less	1 25 per mo
Member and two dependents with income of \$105 00 or less	1 75 per mo
Member and three dependents with income of \$120 00 or less	2 25 per mo
Member and four dependents with income of \$135 00 or less	2 75 per mo
Member and five dependents with income of \$150 00 or less	3 25 per mo

#### FEES

The following schedule of fees is under consideration

- \$ 3 00 for office consultation
- 4 00 for visit outside of office
- 5 00 for night call
- 25 00 to \$75 00 for minor surgery (tonsillectomy, etc.)
- 250 00 for major surgery
- 10 00 for consultation
- 25 00 for assistance in major surgery
- 10 00 for assistance in minor surgery
- 10 00 for anesthetic in major surgery
- 5 00 for anesthetic in minor surgery

#### ELECTION OF OFFICERS AND DIRECTORS

An election of officers and directors of the professional staff will be held at an early date. President Vice-President, Second Vice-President Secretary Assistant Secretary Treasurer Assistant Treasurer and a Board of nine Directors will be elected by the members.

There will also be an election among the lay members who will elect their officers and delegates to confer with the staff officers at regular intervals.

The staff will be limited to three hundred members for the first year, or until such time as the administration problems have been worked out There are still some founder memberships open for subscription

K. L. Dieterle, president of the Medical Diagnostic Association, discusses some further features of the plan in the June 1932 Bulletin

Have this panel choose a representative who is capable of contacting the lay individual of minimum income—say \$200 00 per month or less—and organize them into a group of 10,000 or more, who are desirous of obtaining medical care for a charge they can afford to pay—say \$2 00 per month. This would provide a monthly fund of \$20 000 to be paid out for nothing but medical care because the panel is already paying its rent, nurses salaries, equipment expense and general overhead

A fee schedule should be created based on average fees—say \$2 00 per office visit \$3 00 for residence call, \$50 00 for a tonsillectomy, \$250 00 for a laparotomy, etc. Each month the members of the panel would render (to the fund) their statements based on the fee schedule and if the sum total of these equaled \$15 000 00, then each member would be paid at fee schedule rates, and the surplus placed in a fund for such emergencies as an influenza epidemic, etc., and if the statements totaled \$100 000 00 then each would receive his pro-rata share or 20c on the dollar

In the December 1932 issue is the statement that "There has not been and will not be any expense to the Medical Diagnostic Association in connection with this venture This Association has no relationship to the Foundation except as sponsor and with the further exception that the staff membership of the Foundation is at present open only to members of the medical Diagnostic Association"

Further details as to organization and operation are given in the August Bulletin

#### CLASSES OF MEMBERSHIP

The membership will be divided into three main classes—1 Staff or professional 2—Participating or lay, and 3—Sponsors. The Sponsor's membership will be made up of individuals or organizations such as the Chamber of Commerce the Community Chest charity associations etc., and public spirited charitably inclined individuals who desire to support financially or otherwise the principles upon which the organization is founded

The Sponsor's membership should be a means of creating a permanent fund (which could provide for hospital beds etc.) and other funds from which the association's income could be supplemented The personnel of this class of membership would do a great deal to define the character of the organization and remove it from the mercenary group practice or clinical class

The Staff membership will be limited to regular physicians and surgeons licensed to practice in the State of California who are members of or eligible to membership in the Medical Diagnostic Association and who can meet the professional standard which will be required by the Foundation The first 300 of this class of membership will be known as the Founder members The Foundation will limit its staff members to 300 charter members until its details of operation are solved. We believe that we can hasten the time when all who desire membership may avail themselves of it by limiting ourselves at first to a small staff

Staff membership will be of two classes—1 a staff member, 2 an associate or consulting staff member The staff membership will be made up of those who desire to care for the participating members They will make up the greater number and their names will appear on a list arranged alphabetically containing their telephone numbers office hours and office addresses A list of the Staff will be furnished every Participating member from which he may choose his physician.

The Associate or Consulting Staff membership will be made up of specialists or older men who cannot devote the time required but who are willing to be called upon for consultation by any staff member A member of the Associate staff must take part in all surgery in the capacity of surgeon or assistant. No surgery will be done without first having an Associate Staff member in consultation who must agree before any surgical procedure can be performed

A list of the Associate or Consulting Staff membership will be furnished each Staff member to make available to him a consultant or assistant. The list will be arranged alphabetically according to specialties This list will not be available to the Participating member its purpose being solely to provide the Staff members with a list of men competent to act as consultant or assistant in the various specialties. A member of the Consulting or Associate membership may have his name on both lists should he desire to personally treat Participating members in which case his specialty will not appear on the Participating membership list.

Eligibility as an Associate Staff member will be based upon ability and experience, to be judged at first by a committee and later by furnishing case histories or other proof of ability, such as is the custom with the American College of Surgeons

The Participating memberships will be open to the lay individual of small means. No limit will be placed upon the number in this class The membership will eventually entitle the holder in good standing (as described in the By Laws) to all medical care and hospitalization the choice of a physician and the right to have a consultant prior to any surgical procedure.

#### VOTING AND PROPERTY RIGHTS

The voting and property rights of the different classes of membership will not be equal

1 The Participating members will be the owners of all the assets of the corporation, but they will have no vote. They will elect at annual

elections, members of an Advisory Board, composed of 6 members, each to serve for three years, two of whom shall be elected annually. This Board may recommend changes of policy or operation to the executive body, but it shall not have executive power unless its demands or suggestions shall first receive a 90% favorable vote of the Participating members. This must be obtained at an annual or special election.

2 The Sponsor's memberships will be in the nature of an Honorary Membership, which will have no voting power or property rights.

3 The Staff Memberships will have no property rights, but they shall have the voting power of the foundation and its management and control for the benefit of all three classes of memberships, subject to the control of 90% vote of the Participating Membership. The voting power of the Staff Membership will be vested in an Executive Board composed of 5 members each serving 5 years, one to be elected at each annual election.

#### COMMENT

The merits of the plan are

1 Insistence on membership in medical and dental associations insures a fairly high standard of service and professional ethics.

2 It will provide medical service for low income groups with less financial burden to the patients and greater security of at least a limited payment to the practitioner.

3 It claims to insure freedom of choice of physicians within a comparatively large group.

4 According to the initial announcement, it would seem to avoid the evils of lay control and retain all the management within the medical profession.

Its principal defects are

1 It tends to divide the membership of the county medical society and to create a preferred group controlling a section of the market for medical services secured through solicitation of members and their adherence to a contract.

2 Such a partial monopolization of any considerable section of the field for medical practice in any locality would be in the nature of "unfair competition" with those excluded, especially when such exclusion is not based on qualifications or the opinion of patients but on membership in a previously existing organization, and when the number of physicians admitted is so closely restricted.

3 It would be a miracle if such a situation did not result in divisions and controversy within the county medical society.

4 It aligns certain civic, charitable, social, business and industrial organizations with a selected percentage of the profession. The inclusion of this element, with the use of a "representative who is capable of contacting the lay individual of minimum income," forecasts the use of pressure and advertising as means of promotion.

## Association News

### THE MILWAUKEE SESSION

#### Applications for Space in the Scientific Exhibit to Close, February 13

Attention is directed to the fact that applications for space in the Scientific Exhibit at the Milwaukee Session close, February 13. The Committee on Scientific Exhibit will then pass on all applications received and assign space. Application blanks may be obtained from the Director, Scientific Exhibit, 535 North Dearborn Street, Chicago, Illinois.

### MEDICAL BROADCAST FOR THE WEEK

#### American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 9 45 to 9 50 a m (central standard time) over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

February 6 Food Advertising—Good and Bad  
February 8 A Scout is Healthy

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9 45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

February 11 Cosmetics

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### CALIFORNIA

**Bills Introduced**—A 317, to amend the state narcotic drug act, proposes (1) to require those practitioners authorized by law to prescribe, administer or dispense narcotic drugs, to preserve for not less than two years a record in a stated form of the narcotic drugs prescribed, administered or dispensed, (2) to provide that in any proceeding under this act proof that the defendant had in his possession at any time a greater amount of drugs than accounted for by the record referred to shall constitute prima facie evidence of guilt, (3) to penalize any person for possessing a false or fictitious prescription or one that has been altered by any person other than the prescribing physician, dentist or veterinarian, and (4) to provide a procedure for the forfeiture of vehicles used in the unlawful transportation of narcotic drugs. A 477 proposes to repeal "an act to regulate the practice of osteopathy in the state of California, and to provide for a state board of osteopathic examiners, and to license osteopaths to practice in the state, and punish persons violating the provisions of this act," which became a law without the governor's approval, March 9, 1901. At the present time, however, osteopaths are licensed under the authority of the osteopathic initiative act, adopted in 1922. A 313, to amend the provisions of the medical practice act with respect to chiroprody, apparently seeks to permit chiroprodists to employ mechanical appliances of any nature, or any forcible means, for the correction of any deformity or malimposed bones of the feet, but forbids the treatment of fractures of the bones of the foot or the application of splints or casts.

### CONNECTICUT

**Personal**—Dr. Charles B. Horton, New York, has been appointed medical officer of the State School for Boys at Meriden.—Dr. Charles N. Denison has been appointed health officer of New Hartford, succeeding Dr. John R. Lee. Dr. Wilbur J. Moore succeeds Dr. Denison as health officer of Cheshire.

**Bill Introduced**—H 97 proposes to create a board of examiners in chiroprody and to regulate the practice of chiroprody. The board is to consist of one member of the medical examining board and one member of the Connecticut Podic Society. "Chiroprody, or podiatry, shall be held to be the diagnosis of foot ailments and the practice of minor surgery upon the feet, limited to those structures of the foot superficial to the inner layer of the fascia of the foot, the dressing, padding and strapping of the feet, the making of plaster models of the feet and the fitting and adjusting of rigid, semirigid and flexible appliances thereto, and the palliative and mechanical treatment of functional disturbances of the feet as taught and practiced in the schools of chiroprody recognized by" the board.

### DELAWARE

**Bill Introduced**—H 15 proposes to create a state board of examiners of beauticians and to regulate the practice of beauticians. Licentiates are to be authorized to give "treatments affecting or acting upon the skin of the face, scalp or body" and to use electrical appliances and other devices in connection with any of the authorized treatments and practices.

### DISTRICT OF COLUMBIA

**Bacteriologists Honored**—An inaugural banquet honoring the three scientists for whom the society was named was given by the Smith-Reed-Russell Society of the School of Medicine, George Washington University, January 13. Drs. Theobald Smith, retired director, department of animal pathology of the Rockefeller Institute, Princeton, N. J., and Frederick F. Russell, director of the International Health Division of the Rockefeller Foundation, were present. Dr. Walter Reed, who died following the completion of his experimental work on yellow fever, was honored posthumously through Col. Albert E. Truby, who represented Dr. Reed's son, Col. Walter L. Reed, who was unable to attend. The three men were professors of bacteriology at George Washington University during the period from 1886 to 1910. The Smith-Reed-Russell Society is composed of students in the three upper classes whose scholastic average is 86 or above.

## GEORGIA

**Bill Introduced**—S 80, to amend the workmen's compensation act, proposes to require an employer to furnish to an injured employee necessary medical and hospital attention during the entire period of disability, instead of only thirty days as now required by law. The employer's liability is ordinarily to be limited to \$100 but the Department of Industrial Relations may order additional medical and hospital expenses not to exceed \$500.

## IDAHO

**Physicians in State Legislature**—The following five physicians are serving in the Idaho legislature during the present session:

Owen T. Stratton, Salmon senate graduated from Barnes Medical College St. Louis in 1906  
Frank B. Evans Sandpoint, senate Northwestern University Medical School Chicago 1904  
Owen D. Platt St. Maries, senate University of Nebraska College of Medicine 1903  
Mary A. Callaway Boise lower house Fort Worth School of Medicine, 1903  
Dailey C. Ray Pocatello lower house, Hospital College of Medicine Louisville Ky., 1902

## ILLINOIS

**Bills Introduced**—H 161 proposes to make it the duty of every physician, midwife or nurse who attends or assists at the birth of a child, to instil or have instilled in each eye of the new born baby, as soon as possible and not later than one hour after birth, a 1 per cent solution of silver nitrate or some other equally effective prophylactic for the prevention of ophthalmia neonatorum approved by the state department of public health. S 172 proposes that expenses attending the last illness, including physicians' bills to the amount of \$250, funeral expenses and necessary costs of administration, be given a priority over all other claims in the distribution of a decedent's estate.

**New State Health Officer**—Dr. Andy Hall, Springfield, has resigned as health officer of Illinois, and Dr. Frank J. Jirka, Chicago, has been appointed to succeed him. Dr. Hall, who completed a four year term as state health officer, had previously been health officer of Mount Vernon for about the same length of time. He was also mayor of Mount Vernon. He is a past president of the Jefferson-Hamilton County Medical Society and of the Southern Illinois Medical Society, at one time he was secretary of the county medical society. Dr. Hall has three sons who are physicians. Dr. Jirka, who graduated from Northwestern University Medical School in 1910, is assistant professor of surgery at the University of Illinois College of Medicine, Chicago.

## IOWA

**Bills Introduced**—S 128 and H 128 propose to accord hospitals caring for persons injured through the fault of another liens on all rights of action, suits, demands, judgments, or compromises or settlements, which may accrue to the injured persons by reason of their injuries.

## KANSAS

**Bills Introduced**—H 153 proposes that local health officers shall not make any sanitary inspection of schools or inspections of 'the public health' of their students except on the request of local school boards, which are to pay all the expenses of such inspections. H 198 and S 146 to amend the nursing practice act propose (1) to require all registered nurses to register annually and to pay an annual fee of \$1, and (2) to define an accredited training school for nurses as one requiring its students to be high school graduates and whose training includes at least 450 hours of theoretical instruction.

**Society News**—Dr. Oliver H. McCandless, Kansas City, Mo., addressed the Clay County Medical Society in Clay Center Dec. 14, 1932 on epitheliomas. The Douglas County Medical Society heard Raymond A. Schwegler, Ph.D., dean of the school of education, University of Kansas discuss education and medicine at its meeting, Dec. 1, 1932. "Nutritional Disturbances of Children" was the subject of Dr. Harry M. Gulley, Kansas City, Mo., before the Miami County Medical Society in Paola Dec. 14, 1932, and 'Focal Infection' that of Dr. Charles C. Conover, Kansas City, Mo. At a meeting of the Southeast Kansas Medical Society in Parsons Dec. 8, 1932, Dr. Benjamin P. Smith, Neodesha, and Orville E. Stevenson, Oswego, spoke on diabetes, and Dr. Lewis D. Johnson, Clinton, and Howard F. Marchbanks, Pittsburg, appendicitis.

## LOUISIANA

**Dr. Castellani Appointed Director of Ross Institute**—Dr. Aldo Castellani, professor of tropical medicine and head of the department, Louisiana State University Medical Center, New Orleans, has been appointed director-in-chief of the Ross Institute and Hospital, London, succeeding the late Sir Ronald Ross. Dr. Castellani will continue his connection with the Louisiana medical center. He has been director of tropical medicine and dermatology at the Ross Institute for many years.

**Society News**—Cancer in relation to the specialties indicated was discussed by the following physicians at a recent meeting of the East Baton Rouge Parish Medical Society: Clarence A. Lorio, urology, Thomas S. Jones, surgery, H. Guy Riche, internal medicine, Louis I. Tyler, pediatrics, Carl Austin Weiss, ear, nose and throat, Rufus Jackson, eye, John L. Beven, laboratory, Thomas J. McHugh, gynecology and obstetrics, Edward O. Trahan, history, and Lawrence D. Landry, D.D.S., dentistry. Drs. Carl A. Weiss, Sr., and Edward O. Trahan, Baton Rouge, addressed the East and West Feliciana Bi-Parish Medical Society in Clinton recently on "Tuberculosis of the Eye, Ear, Nose and Throat" and "Bacterial Endocarditis," respectively.

## MAINE

**Bill Introduced**—H 91 authorizes the governor to appoint a commission to study the question of medical education and the advisability of establishing a medical college in the state.

## MARYLAND

**Editor of Annals Appointed**—Dr. Maurice C. Pincoffs, professor of medicine, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, is the new editor of the *Annals of Internal Medicine*, official journal of the American College of Physicians, he will assume his duties with the February issue.

**Gift to Dr. Kelly**—Dr. Howard A. Kelly, professor emeritus of gynecology, Johns Hopkins University School of Medicine, Baltimore, was recently bequeathed \$100,000 by a former patient, Miss Kate Gleason, Rochester, N. Y., as a tribute to his work with radium in the treatment of cancer. The bequest will be distributed among the unemployed and others in need, it was stated. Dr. Kelly was professor of obstetrics and gynecology at Johns Hopkins from 1889 to 1899, and professor of gynecology from 1899 to 1919. Since that time he has been professor emeritus of gynecology.

## MASSACHUSETTS

**Health at Fall River**—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a population of 37 million, for the week ended January 21, indicate that the highest mortality rate (231) appears for Fall River and for the group of cities as a whole, 129. The mortality rate for Fall River for the corresponding week in 1932 was 118 and for the group of cities, 115. The annual rate for the eighty-five cities for the three weeks of 1933 was 13.3, as against a rate of 12.2 for the corresponding period of 1932. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The facts that some cities are hospital centers or that they have large Negro populations may tend to increase the death rate.

**Bills Introduced**—S 113 proposes to prohibit experimenting or operating on a live dog for any purpose other than the healing or curing of that dog. H 370 proposes to validate the illegal actions of the board of registration in medicine in registering as qualified physicians, between March 10, 1917, and Jan. 1, 1933, graduates of medical schools giving courses of instruction of less than thirty-six weeks in each year or a full four years' course, as is required by the medical practice act. H 385 proposes to require every asylum, hospital or school having more than ten inmates located above the first floor, in any city, town or district having a general fire alarm station, to be equipped with a fire alarm box. H 755 to amend the workmen's compensation act, proposes that the department of industrial accidents may appoint a duly qualified physician who is not employed in any capacity by an insurance company to examine injured employees and report to the department. H 926 proposes to provide for the licensing, after examination by the board of registration in medicine, assisted by two chiropractors or persons to practice chiropractic. Chiropractic is defined as 'the external treatment of the human spine by mechanical or manual means.' Persons so licensed shall not be permitted to prescribe or administer alcohol or drugs for internal use or to perform operations in surgery, or to engage in the practice of obstetrics. H 902,

to amend the workmen's compensation act, enumerates an extensive list of occupational diseases which it proposes shall be compensable. H 1114, to amend the workmen's compensation act, proposes that hospitals supported in whole or in part by contributions from the commonwealth or from any town, incorporated hospitals offering treatment to patients free of charge, and incorporated hospitals conducted as public charities shall be precluded from recovering any charges for services rendered to injured employees, in excess of the amount approved by the department of industrial accidents.

### MICHIGAN

**Bill Introduced**—H 140, to amend the workmen's compensation act, proposes, in effect, to make compensable all occupational diseases contracted in the course of any employment covered by the act.

**State Officers Reelected**—For the twenty-first consecutive year, Dr. Frederick C. Warnshuis, Grand Rapids, was reelected secretary of the Michigan State Medical Society, January 12, in Detroit. Dr. William A. Hyland, Grand Rapids, was reelected treasurer and Dr. James H. Dempster, Detroit, reelected editor. A special meeting of the house of delegates of the state society will be held the last of March in Detroit to receive the report of the committee on survey of state medical and health services.

**Health Work by Foundation Extended**—The experimental health program carried on by the W. K. Kellogg Foundation, Battle Creek, has been extended to Eaton County, according to newspaper reports, January 12. Following the foundation's plan carried out in Allegan and Barry counties, a unit will be established in Eaton County to supervise child health work in cooperation with the schools. A minimum of \$12,000 annually will be allocated by the foundation to the county for the work, which will include the services of a health officer, public health nurse, sanitary inspector and a clerk. The health unit has received the endorsement and support of the Eaton County Medical Society, newspapers state. Through the W. K. Kellogg Child Welfare Foundation founded in 1930, children who are subnormal mentally or physically will receive scientific treatment to correct their defects or, if this is not possible, special training to minimize their handicaps. The work to be done largely in cooperation with the schools.

### MINNESOTA

**Bills Introduced**—S 290 proposes to allow physicians to prescribe alcoholic liquors under the same general restrictions that are imposed by the National Prohibition Act. H 394, to amend the pharmacy practice act, proposes to define drugs, medicines and poisons, within the meaning of the act, as follows: "Drugs" means all substances used as medicines or in the preparation of medicines and such material as may be used in the treatment of diseases, "medicines" means drugs or chemicals or preparations thereof, in suitable form for the prevention, relief or mitigation of disease, when used either internally or externally by man or for animal, "potent drugs or poisons" means any substance which applied externally, or taken internally, may impair the normal function of any tissues or organ of the body." This bill proposes also to eliminate that provision of the present law which states that a dealer whose shop is more than two miles from a drug store is not prevented from selling any commonly used medicine or poison which has been put up for sale by a registered pharmacist.

### MISSOURI

**Bills Introduced**—S 3 and S 4 propose to vest in the commissioner of health all the rights, powers and duties now exercised by the state boards of optometry and of nurse examiners. H 98 proposes that all drugs and chemicals of coal tar origin, intended for human medication, except when prescribed by a licensed physician, shall be plainly labeled with the true English name and bear a statement as to their coal tar origin, their dangerous effects and the names of at least two active antidotes. S 20 proposes to create a state commission for the rehabilitation and education of the indigent crippled and physically handicapped children of the state. H 26, to amend the medical practice act, proposes that the license of a practitioner cannot be revoked for producing criminal abortion until after he has been convicted of that crime. The present law permits revocation, whether or not criminal proceedings have been instituted. S 14 to amend the pharmacy practice act, proposes that members of the board of pharmacy serve for a term of four years rather than the five year term now provided by law and be subject to the power of removal by the governor at his pleasure.

### NEW HAMPSHIRE

**Bills Introduced**—H 68 proposes to authorize the attorney general to employ a finger print and criminal identification expert, to be designated Superintendent of the Bureau of Criminal Apprehension and Identification. He may employ also three experienced investigators of crime, to operate under the superintendent, for the investigation of crimes throughout the state. This seems to be a movement in the direction of the establishment of a criminologic institute, advocated by the American Medical Association. H 70 limits the right of corporations to own pharmacies to corporations owning and operating pharmacies in the state at the time of the passage of the act. Such corporations are to be permitted to continue to operate them and to establish additional pharmacies. H 122, to amend the chiropody practice act, proposes (1) to define a chiropodist as "one who examines, diagnoses, or treats medically, mechanically, or surgically the ailments of the human foot, except the amputation of the toes or foot, or the use of anesthetic other than local", and (2) to eliminate the present requirement that an applicant must have a high school education in addition to having been graduated from a recognized college of chiropody. H 286, to amend the pharmacy practice act, proposes to provide a penalty for persons, firms or corporations maintaining pharmacies, drug stores or apothecary shops, or places designated or advertised as such, unless the owners are registered pharmacists or employ registered pharmacists to supervise such places. H 318 to amend the workmen's compensation act, proposes to require an employer to render to an injured employee necessary medical and hospital services during the entire period of disability, instead of the fourteen day period now required.

### NEW JERSEY

**Bill Introduced**—S 46, to amend the workmen's compensation act, proposes to eliminate the statutory definition of hernia, as ordinarily a disease and only rarely an accident and as presumptively of either congenital or slow development in the absence of a tear or puncture of the abdominal wall. Proof of the industrial origin of a hernia, the bill proposes, may be by preponderance of evidence and need not as at present be conclusive proof. Time for the manifestation of symptoms after the event alleged to have caused the injury, within which industrial origin is to be presumed, is to be extended. Detailed provisions of the present law defining the relative responsibilities of employer and employee for the treatment of an industrial hernia will be eliminated if this bill is passed.

### NEW YORK

**Bills Introduced**—A 354, to amend the medical practice act, proposes to permit the board of regents to restore a license to a person whose license has been forfeited by conviction of a felony, even though the conviction was for misconduct in his professional capacity, if he is pardoned by the governor of the state or by the President of the United States. A 345, to amend the pharmacy practice act, proposes that every place in New York City in which drugs, chemicals, medicines, prescriptions or poisons are retailed or compounded shall be deemed a pharmacy, within the meaning of the act, and be under the personal supervision of a registered pharmacist. S 433 proposes that no hospital, supported wholly or in part at public expense, shall hereafter charge any fee or other compensation for medical services rendered while operating a clinic to which the public is invited.

### New York City

**Course on Eye Conditions**—The extension division of New York University announces for welfare workers, public health nurses and other interested persons a course on eye conditions to begin February 7 and extend through May, presented with the cooperation of the New York State Department of Social Welfare. Lectures will be held weekly at University and Bellevue Hospital Medical College. Among the instructors will be Drs. Conrad Berens, John M. Wheeler, Webb W. Weeks, Bernard Samuels and Willis S. Knighton.

**Portrait of Dr. Polak**—At the meeting of the Medical Society of the County of Kings, January 17, a portrait of the late Dr. John Osborn Polak was presented to the Brooklyn Gynecological Society to be hung in the auditorium of the society's building. The portrait, which was given by Dr. Polak's daughter, Mary, was unveiled by Dr. Alfred C. Beck. Presentation addresses were made by Drs. Frank L. Babbott Jr. and George Gray Ward Jr. At this meeting Dr. John J. Masterson, incoming president of the county society, delivered his inaugural address on "Medicine—An Economic Survey," and Dr. Edward L. Keyes spoke on syphilis in pregnancy.

## NORTH CAROLINA

**Bills Introduced**—S 58 and H 120 propose to levy an annual occupational tax of \$25 on practicing physicians, dentists, osteopaths, chiropractors, chiropodists and optometrists. If receipts from practice are below \$1,000, the tax is to be \$12.50. The licenses of practitioners failing to pay this tax may be revoked.

**Bill Passed**—S 102, to amend the medical practice act, was passed by the Senate, January 25. It proposes to authorize the revocation of the licenses of those licentiates who have been guilty of unprofessional and dishonorable conduct, unworthy of and affecting the practice of medicine, or who have been convicted in any court, state or federal, of criminal offenses involving moral turpitude. The provision in the present law permitting the board to revoke the licenses of licentiates guilty of wilful violations of the rules and regulations of the board, the bill proposes to eliminate. The findings and action of the board with respect to revocation is to be final and conclusive and not subject to appeal to the courts.

## NORTH DAKOTA

**Bills Introduced**—S 104, to amend the medical practice act, proposes (1) to remove the express prohibition against osteopaths prescribing and administering drugs and performing surgery, (2) apparently, to permit osteopaths, chiropractors and chiropodists to use the title 'doctor', (3) to permit any person to prescribe or administer "food, water, light, heat, air, exercises, baths or massage to any person for the prevention, relief or cure of any physical or mental ailment", and (4) to exempt midwives from the provisions of the act so long as they do not prescribe or administer drugs or medicines, perform surgical or physical operations except massage, or hold themselves out as physicians. S 103 proposes to create a board of examiners in naturopathy and to regulate that practice. Naturopathy, which under this bill includes physiotherapy, is defined as 'a healing system, the science and art [sic] of applied natural therapeutics, hygiene, sanitation or combination thereof which enables the naturopathic physician to direct, advise or prescribe food, water, light, heat, color, exercises, baths, active and passive manipulation non-toxic herbs, roots and barks, electrical and mechanical instruments, or applied natural sciences to assist nature to restore a normal state of health'. S 105 proposes to repeal the present osteopathic practice act and to enact a new one which raises the educational requirements for applicants and, apparently, would grant osteopaths greater rights than are now accorded. The bill defines osteopathy as 'the art and science of applied therapy as heretofore or hereafter, taught by the recognized colleges of osteopathy except major surgery'. The bill proposes to permit osteopaths to practice within the confines of institutions maintained wholly or in part by public funds.

## OHIO

**Bill Introduced**—H 42 to amend the workmen's compensation act, proposes to make compensable any illness or disease arising out of an employment covered by the act.

**New Professorship of Surgery**—The board of trustees of Western Reserve University School of Medicine, Cleveland, announced January 13 that an anonymous gift of \$300,000 had been accepted for the establishment of the Oliver H. Payne chair of surgery. Dr. Carl H. Lenhart, who was appointed professor and head of the department of surgery Dec. 6, 1932, was appointed the first to occupy the new professorship. The foundation was established in memory of the late Col. Oliver H. Payne, former business man of Cleveland who made many gifts to medicine and education. With H. M. Hanna he founded the H. K. Cushing laboratory of experimental medicine at Western Reserve. He died in 1917.

## OKLAHOMA

**Bills Introduced**—S 54 to amend the pharmacy practice act proposes (1) to authorize the board of pharmacy to license annually persons not registered pharmacists to sell any drugs or poisons, patent or proprietary medicine or commonly used household drugs in packages or containers which have been prepared for sale to consumers by pharmacists, manufacturers or wholesale druggists who manufacture the same. Apparently under the present law persons other than registered pharmacists may sell the drugs and chemicals enumerated without licenses from the board of pharmacy. S 138 proposes to prohibit the cultivation and the selling or other distribution of marihuana, cannabis indica, or any preparation made from the latex genus Cannabis. Pharmacists are to be allowed to sell the drugs named for sale on written prescriptions

of physicians, dentists or veterinary surgeons. S 139 proposes that any person who is above 31 years of age and of good moral character, and who has had ten years' practical experience in compounding physicians' prescriptions in the state, may become a registered pharmacist on passing the examination required by the pharmacy board.

## OREGON

**Bill Introduced**—H 101, to amend the osteopathic practice act, proposes that applicants for license be examined and licensed, and that osteopathic licenses be revoked in proper cases, by an independent board of osteopathic examiners. These functions are now exercised by the board of medical examiners, on which there is one osteopath.

## PENNSYLVANIA

**Health Director Appointed**—Dr. William W. McFarland was appointed director of health of Pittsburgh, January 24, to succeed the late Dr. Charles B. Maits. Dr. McFarland has been a medical supervisor in the city bureau of child welfare for the past two years and has been a member of the school medical inspection staff since the bureau was established in 1910. He is a native of Pittsburgh and a graduate of the University of Pennsylvania School of Medicine, class of 1902.

**Bills Introduced**—H 168 and S 178, to amend the workmen's compensation act, propose that any physician or hospital that has furnished medicines, supplies or services to an injured employee shall be deemed a party in interest and have standing before the workmen's compensation board and the courts to present his or her claim. H 360 proposes that coroners in counties of the third class shall be licensed physicians and, in addition to performing the duties now required of coroners, shall act as medical advisers for the county homes and for the county jails of their respective counties. H 237, to amend the workmen's compensation act, proposes to make compensable all occupational diseases contracted in any employment covered by the act. H 448 proposes to require hospitals in which maternity cases are treated to take the finger prints of all infants born there and of their mothers, a copy of which is to be sent to the department of health.

## Philadelphia

**Society's Views on Economic Questions**—The board of directors of the Philadelphia County Medical Society at a meeting, January 11, adopted unanimously a set of resolutions dealing with the principal economic problems confronting the medical profession. The resolutions demand remuneration for physicians who serve in free clinics and dispensaries and condemn the maintenance of such institutions except for the indigent sick. They analyze the features of contract practice that are considered unethical and urge that all physicians now engaged in it or contemplating such action investigate the conditions of their service carefully and be guided by the Principles of Medical Ethics of the American Medical Association. Compensation practice as administered at present in Pennsylvania is condemned and members of the society are urged to cease activities connected with it. The committee claims that the compensation laws have resulted in solicitation of patients, underbidding for contracts, interference with choice of physicians and other abuses contrary to the ethics of the medical profession. Closer cooperation with the city department of health along the lines established in Detroit is approved. In one section the resolutions declare that solicitation of patients for periodic health examinations and immunization procedures is considered ethical. Representation of medical staffs of hospitals on boards of trustees is recommended in order that physicians may have larger voice in conduct of the institutions. Their voice unqualified disapproval of contract practice as found in industries and recommend investigation of the legality of corporation clinics. They deplore the present practice of giving free information to insurance companies and urge that steps be taken to abolish it. Encroachment on the field of medical practice by lay workers is also considered and it is suggested that violations be reported to the state medical board for elimination. Finally, the committee recommends enlargement of the scope of graduate instruction to include techniques of public health work, first aid and related fields.

## SOUTH DAKOTA

**Bill Introduced**—H 33, apparently, is an attempt to permit the state board of health to consist of 'practitioners of the healing art'. Membership is now limited to 'physician'. If this bill is enacted, osteopathic representation on the state board of health will be mandatory.



## TEXAS

**Personal**—Dr James W Bass, Dallas, was elected president of the Texas Public Health Association at the recent annual meeting in Dallas—Dr John T Harrington, Waco, was elected president of the board of trustees of Baylor University, recently—Dr Thomas C Lynch, Wichita Falls, was recently appointed health officer of Wichita County

**Bill Introduced**—H 153, to amend the law regulating maternity hospitals, proposes to authorize injunctions to restrain the operation of any maternity hospital which (1) is operated without a license, (2) is guilty of selling or trafficking in babies, (3) harbors persons of unsound mind or suffering from infectious or contagious diseases, except women suffering from venereal disease, or (4) is maintained for any other purpose than the sheltering of infant children or the reception, care and treatment of pregnant women

## VERMONT

**Bill Introduced**—H 7, authorizes the state board of health to expend \$8,000 during the fiscal year 1934, and \$16,000 during the fiscal year 1935, for the after-care and treatment of indigent persons suffering from infantile paralysis and for the purchase of necessary appliances

**Society News**—The Vermont Social Hygiene Council was recently formed, with Dr Charles F Dalton, state health officer, as president—Dr Kenneth J Tillotson, Belmont, Mass, addressed the Burlington and Chittenden county medical societies at a joint meeting at the University of Vermont, Burlington, recently

## WASHINGTON

**Society News**—Dr Hermon C Bumpus, Jr, Rochester, Minn, addressed the King County Medical Society, Seattle, January 23, on transurethral prostatic resection—Dr Robert C Coffey, Portland, Ore, addressed the Walla Walla Valley Medical Society in Walla Walla, January 12, on abdominal surgery

**Bills Introduced**—H 92 proposes to levy on every practitioner of the healing art an annual tax equal to 0.5 per cent of the sum obtained by subtracting \$3,000 from his gross professional income. If the gross professional income exceeds \$3,000, the minimum tax to be imposed is \$10. H 110 requires all applicants for licenses to marry to submit certificates from reputable physicians showing that the applicants are free from all venereal diseases as of a date not more than ten days prior to the application. It is to be a gross misdemeanor for any physician to certify falsely as to the condition of either or both of the applicants. S 60 proposes to create a board of sanipractic examiners and to regulate the practice of sanipractic. Apparently applicants for licenses to practice sanipractic, whether by examination or by reciprocity, are not to be required to stand examination by the examining committee in the basic sciences as is required of all other applicants for licenses to practice the healing art. Sanipractic licentiates are to be permitted to treat disease by the sanipractic method which, apparently, would include the use of mechanical or electrical instruments or appliances, "traumatic" surgery, minor surgery, and "official" surgery. H 115 proposes to permit dentists and dental students to possess human dead bodies for the purpose of anatomic inquiry or instruction

## WEST VIRGINIA

**Bills Introduced**—S 29 and H 128 propose to create a board of barber and beautician examiners and to regulate the practice of barbering and beauty culture. H 99 proposes to require physicians to attend all confinement or childbirth cases for which their services are requested, regardless of the ability of the patient to pay. If a physician is unable to collect for such services the county is to pay him \$15 for each case

## WISCONSIN

**Bill Introduced**—S 45 to amend the optometry practice act proposes to permit the revocation of the license of any licentiate who uses the title "Doctor" or "Dr" as a prefix to his name without the word "optometrist"

## WYOMING

**Bill Introduced**—H 71 proposes that every person securing a marriage license must produce a certificate dated within ten days before the date of the application for such marriage license from a licensed physician showing applicant to be free from any venereal disease in a communicable stage

## GENERAL

**Advisory Board on Cancer Problems**—The American Society for the Control of Cancer recently announced through its executive committee that the board of directors of the society would serve as a consulting board to advise on any problems of cancer research or treatment that may be submitted to it by individuals or institutions. The board is composed of fifty physicians, surgeons, chemists, biologists, statisticians and financiers

**Yellow Fever Volunteer Dies**—The death of Paul Hamann, East Moline, Ill, one of the volunteers in the famous yellow fever experiment in Cuba in 1900-1902, has been reported. He died of bronchopneumonia following influenza after an illness of one week. Hamann was one of the fifteen living volunteers who received gold medals and pensions of \$125 per month authorized by Congress in 1929. The medals were presented in 1931 (THE JOURNAL, Dec 5, 1931, p 1718)

**University Limits Foreign Students**—The New York Times reports that the University of Cologne, Germany, has recently decreed that qualifications of all foreign applicants for admission are henceforth to be examined more carefully in order not to crowd out better prepared German students. The Prussian ministry of education has also ordered that all applications of foreign students be submitted to it for approval. As a result of this stricter control, it was said, only fifteen out of sixty American students who recently applied for admittance actually arrived

**Society News**—Dr Frederick C Cordes, San Francisco, has been appointed secretary of the Pacific Coast Oto-Ophthalmological Society, succeeding the late Dr J Frank Friesen—The American Child Health Association has abolished its publication division and reduced the staff of its medical division as a result of reduced income, it was announced, January 1. The divisions of research and education will continue their work, it was said—The thirtieth annual meeting of the American Urological Association will be held in Chicago, June 20-22—Dr Charles R Stockard, professor of anatomy, Cornell University Medical School, New York, was elected chairman, and Dr Walter M Simpson Dayton, Ohio, secretary, of Section N (Medical Science) of the American Association for the Advancement of Science at the recent annual meeting

**Medical Bills in Congress**—*Changes in Status* S 100 has been favorably reported to the House, proposing to amend the laws of the District of Columbia by authorizing degree-conferring institutions heretofore incorporated under such laws, but operating exclusively in foreign countries, to use the words "American," "Federal," etc, in their titles. The law thus amended is aimed at so-called universities that issue to correspondence students degrees in medicine, dentistry and other studies. The institutions heretofore incorporated are believed to be free from offense in this regard. H R 14199, the War Department Appropriation bill, has passed the House. Efforts on the part of Representative Barbour California, and of Representative Beedy, Maine, to amend the bill to restore to the medical dental and veterinary corps units the privilege of participating in the appropriation for the Reserve Officers' Training Corps, and to permit the enrolment of students in these units were fruitless. *Bill Introduced* H R 14395, introduced by Representative Celler New York, relates to the prescribing of medicinal liquor. It proposes to remove the statutory limitations with respect to quantity and with respect to frequency of prescription, and provides that, subject to regulations, no more liquor shall be prescribed to any person than is necessary to supply his medicinal needs. It proposes, further, to discontinue the use of the existing prescription forms and to authorize the issuance of stamps in lieu thereof to be affixed by physicians on every prescription issued for medicinal liquor

## Deaths in Other Countries

**Georges Haret**, head of the radiologic service at La Ribouisiere Hospital Paris, author of textbooks on radiology, aged 58 as the result of radium burns following a series of operations and amputations—**Sir Robert Jones**, lecturer in orthopedic surgery University of Liverpool, emeritus president, British Orthopedic Association author of textbooks on surgery at Llanfchain, Wales, aged 74

## CORRECTION

**Exophthalmic Goiter in Boston and Chicago**—In the legend of chart 6 in the article by Thompson and Means in THE JOURNAL Oct 29 1932 p 1487, 90 minims of compound solution of iodine was computed as containing 7.56 mg of iodine whereas the latter figure should have been 756 mg of iodine



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Jan 7, 1933

#### Massive Radiotherapy The Radium Bomb Rehabilitated

As stated in previous letters, the Radium Commission withdrew the 4-Gm radium bomb that was used at the Westminster Hospital for massive irradiation and subdivided it into four units for distribution. This decision was made because the results were not satisfactory, but it aroused much criticism, as massive irradiation was going on in other countries. A conference of leading physicians and surgeons, including the presidents of the Colleges of Physicians and Surgeons (Lord Dawson and Lord Moynihan) then considered the question. In a report issued in March, 1932, they concluded that the decision of the Radium Commission was sound, "though without prejudice to the question of the therapeutic value of the 4-Gm or even larger aggregations of radium." They also reported that a fully equipped radium institute is needed in London, where the more difficult and speculative problems connected with radium and roentgen therapy can be studied.

The conference appointed an expert committee consisting not only of radiologists but also of two eminent physicists—Lord Rayleigh, FRS, and Prof J C M'Lennan, FRS—with the following reference: (a) What is the scientific case for mass irradiation, and what are the advantages and dangers attaching to it? (b) What are the advantages and risks of massive surface irradiation by radium compared with those of radium needles and radon seeds? The committee has issued a report, which is possibly the most authoritative pronouncement on radiotherapy in this country. The use of radium in malignant disease, it is stated, depends on the empirical observation that in a large number of instances the cells of malignant tumors are destroyed by an amount of radiation insufficient to destroy normal tissue. This proposition is generally true over a large range of wavelengths and certainly extends from  $\alpha$ -rays with a wavelength of 1 angstrom unit to hard gamma rays with a wavelength of 0.04 angstrom unit or less. In spite of an immense amount of research, it is still uncertain whether there is any specific difference between the longer and the shorter waves in their effects on the cells, although there is a general impression that short waves have a higher degree of selection for the cells of malignant tumors in virtue of their rapid growth. What is, however, certain is that short waves have a higher penetrating power and therefore are capable of conveying energy into the deeper tissues, while longer waves are absorbed in the more superficial tissues and there expend a large share of their energy. Hence  $\alpha$ -ray apparatus is being made to generate shorter and shorter waves, but no apparatus has yet been made to generate waves as short as the gamma rays of radium. These short wave generators are still on trial, and it is important to be able to compare their effects with those of mass irradiation by radium.

The margin between general destruction of the tissues and selective destruction of the malignant cells is very small and it is therefore essential that every element of tissue throughout the region treated should receive exactly the same amount of radiation for if at any point there is a less amount some malignant cells will survive, while if at any point there is an excess the supporting tissues will be destroyed. Success in treatment depends on obtaining a uniform field of radiation and has always been proportional to the accuracy with which this physical problem has been solved and there are strong grounds for believing that on its more complete solution may depend the whole future of radium therapy in cancer. Throughout the

field the scalar value of the energy absorbed must be constant both in the cross section and in the depth of the field. For this purpose gamma rays present a definite advantage over  $\alpha$ -rays, since, owing to their shorter wavelength they have a greater penetration. In both cases the intensity of the field diminishes with distance from the source, but the gamma rays are much less affected by tissue absorption and therefore it is easier to maintain a uniform field as depth increases. It is true that the great volume of power available in the modern  $\alpha$ -ray tube allows of a greater working distance, so that the energy delivered in the depth of the body may be greater than that obtained from radium. But the use of such a volume of energy has the disadvantage that it produces more constitutional disturbance than gamma rays of equal adequacy, possibly owing to more complete absorption by the tissues. The relative value of the two methods can be discovered only by further experience.

#### MASSIVE IRRADIATION WITH RADIUM

Massive units of radium outside the body are a powerful means of subjecting a region of considerable volume to uniform irradiation by gamma rays, and, if sufficient radium were available, would be the most perfect physical solution of the problem. A single beam is not sufficient, since the fall in intensity at a distance necessitates excessive irradiation of the proximal tissues. This may be overcome by multiple ports of entry, and by calculation an almost uniform field can be obtained throughout any volume of tissue. In spite of variety of methods, it is still only in special instances that the radiotherapy of cancer is successful, and there remain whole regions where it has not been seriously attempted, such as deep-seated tumors in the chest and the abdomen. Here massive irradiation with its penetrating rays appears at first sight to be the solution. But difficulties that are not physical but are inherent in the disease arise. However, there are grounds for hoping that by some combination of surgery and irradiation even cancer of the alimentary tract may ultimately be brought under control. Such cautious observers as Forsell and Regaud hold that irradiation from a distance, either by massive radium units or by  $\alpha$ -rays at a potential not yet obtained, will play an essential part.

#### SAFETY OF PATIENTS

The methods described may be employed by experts without danger to themselves or to patients, but the use of radium in any form by the inexpert is dangerous. Massive dosage is not necessarily associated with any particular danger to the patient. The severe constitutional disturbance observed in some instances has been due to some error of technic. Massive irradiation with radium (telerradium) has proved valuable, though in a limited field.

After full consideration, the committee is convinced that a large radium unit should be erected in this country under conditions of coordinated clinical, experimental and physical research and should contain not less than 5 Gm of radium element. The conference has adopted the view of the committee. It may be added that a 15-Gm unit is likely to be established in Brussels on the advice of an international committee.

#### Peerage for Sir Thomas Horder

Sir Thomas Horder, Bart, physician to St Bartholomew's Hospital has been made a peer. There are now three peers in the medical profession, the other two being Lord Moynihan and Lord Dawson of Penn. It is only in comparatively recent times that peerages have been conferred for medical eminence. The first was conferred on Lord Lister, the founder of antiseptic surgery. Sir Thomas Horder is physician to the Prince of Wales and to the prime minister, Mr Macdonald. He first made a reputation as a clinical pathologist, at a time when the late Sir Frederick Andrewes, pathologist to St. Bartholo-

mew's Hospital, he did important work on the streptococci. He then became a leading clinician. In this age of specialism, with its attendant fads, he can be relied on to give a balanced authoritative opinion. He has a great reputation as a diagnostician and is an excellent clinical teacher. He is also a social worker and a prominent supporter of the birth control movement.

### The Irish Hospitals and Sweepstakes

The success of the Irish hospitals in financing themselves by taking advantage of the gambling spirit of the world is so great that, since the special act passed by the dail in 1930, claims by forty-eight hospitals for aid amounting to \$47,000,000 have been made and \$32,000,000 has been awarded. Receipts from previous sweepstakes funds amount to \$8,800,000. It is stated that \$14,300,000 was awarded for endowment purposes, \$15,700,000 for building works, site, mechanical plant and fees, \$1,320,000 for repayment of loans and \$760,000 for medical, surgical and pathologic apparatus. It is announced that more hospitals will participate in subsequent sweepstakes. The claims are much in excess of the awards, some of which are considered insufficient, and in some cases amended claims are being prepared. Seven sweepstakes have been arranged to take place before July, 1934, when the special act expires.

### PARIS

(From Our Regular Correspondent)

Dec. 21, 1932

### Relation of Dementia Praecox to Tuberculosis

The Societe medico-physiologique recently devoted a session to the consideration of a question on which the opinions of neurologists differ. It has been observed that in a large number of cases of dementia praecox one finds unmistakable evidence of tuberculosis. Possibly it is premature to conclude at once that dementia praecox is a cerebral type of tuberculosis. F. d'Hollandser and Rowroy injected into forty-seven guinea-pigs the cerebrospinal fluid of twelve patients affected with dementia praecox, and forty-three of the pigs developed lesions of experimental tuberculosis, susceptible of serial inoculation into other guinea-pigs. But the tuberculosis that is produced is benign, showing a spontaneous tendency to sclerosis. In four of these twelve patients, acid-resistant bacilli were found. Of thirty samples of blood, cultures revealed in ten instances the presence of tubercle bacilli. Researches showed the presence of a virus of tuberculosis in the cerebrospinal fluid in certain cases of dementia praecox (eleven positive cases in twelve patients) and also in the brain. The authors conclude that tuberculosis plays an important part in the etiology of dementia praecox. H. Baruk, Bidermann and Albane made the same observations on guinea-pigs, some of which had been previously rendered allergic. Only the latter presented disorders, either in the form of an immediate local ulceration or in the form of nervous disturbances, at the end of from three to nine weeks, together with paraplegia, epilepsy and death in convulsions. When the experiment was repeated with the cerebrospinal fluid of persons affected with tuberculous pleurisy but free from dementia praecox, the results were negative. Later, Toulouse, P. Schiff, Valtis and Van Demse searched for the tuberculous ultravirus in the cerebrospinal fluid of patients presenting the syndrome of dementia praecox, in order to eliminate the cases in which tuberculosis might have arisen during the sojourn in the psychopathic hospital. Three patients who developed later a characteristic dementia praecox gave no signs of tuberculosis. The avirulent bacilli of Calmette-Valtis, the discoverers of the ultravirus, were found only in a patient who had had a curable attack of delirium and in a patient who presented a schizophrenic state. In this case, the spinal fluid taken during an interval between attacks contained only the ultravirus. When taken during the attacks, it revealed, in addition to the

ultravirus, a few bacilli. Louis Coudere, in a comprehensive report, reached the conclusion that dementia praecox is usually only the mental sign of meningo-encephalitis due to a neurotropic ultravirus of a tuberculous nature. In 60 per cent of patients with dementia praecox, he found the general habitus characteristic of tuberculous patients. In the 60 per cent, slight signs of tuberculous infection were mingled with neurologic signs. The inoculation of the cerebrospinal fluid of these patients into guinea-pigs sensitized by a minimal dose of ultravirus produces reactions.

### Annual Report on Smallpox Vaccination

Addressing the Academy of Medicine, Mr. Camus presented recently his annual report on the vaccinations and revaccinations performed in France, Algeria and the French protectorates during 1931 and in the French colonies during 1930. Camus took account of both private and public vaccinations. The total number of primary vaccinations in 1931 was greater by 20,652 than that of 1930. A diminution in the primary vaccinations was reported in only thirty-five departments of France, and there was an increase for 1931 of 122,650 over the preceding year. The revaccinations reached a high figure in all except six departments. The presence of smallpox was reported by the departmental authorities in only three departments: Indre-et-Loire (three cases, two of which were fatal), Herault (two cases, no deaths), and Bouches-du-Rhone (two cases, no deaths). In the colonies, in 1930, more than 13,000 cases of smallpox were observed. The preceding year, there were only 7,478 cases. A large number of vaccinations were performed (8,451,829 for a population of 47,072,750). In Morocco, for the year 1931, 727 cases of smallpox were reported (the average of recent years was only 300 cases). There were only twelve cases among the European and four cases among the French population. The vaccinations were therefore intensified, and the epidemic rapidly subsided. In Tunisia, which has 2,410,692 inhabitants, including 195,293 Europeans, smallpox is diminishing year by year. There were only nineteen cases in 1931, with four deaths. Only the systematic and persistent application of vaccination, together with all forms of civil control, made it possible to achieve this excellent result. During the year 1931, 611,919 vaccinations were performed in Tunisia.

### A Bill Providing for a Council on Medical Ethics

For many years, the physicians of France have been demanding the creation of an official council on medical ethics, patterned after that which exists for the lawyers and possessing the same privilege of judging alleged violations of professional honor, independently of the delicts that come under the jurisdiction of the ordinary courts. The Confederation des syndicats medicaux had assumed in part this role, but its decisions had no legal weight. But physicians are not all favorable to the idea, there are many who fear that such a tribunal may not always be impartial and that sometimes it may render decisions inspired by professional jealousy. The Academy of Medicine, when consulted on the subject, a few years ago, gave an unfavorable opinion and proposed in preference a return to the ancient oath of Hippocrates, in connection with the conferring of the doctor's degree, and the creation of a course of instruction in professional deontology at the faculties of medicine. The question slumbered on until suddenly, Dec. 8, 1932, at a morning session of the chamber of deputies, a bill providing for the creation of a council on medical ethics, presented by Deputy Xavier Vallat, was voted on and passed without examination or discussion, along with numerous other bills of secondary importance being simply read to the assembly and voted on at once by show of hands while the attention of parliament was centered on the discussion of the grave question of the debts owed to the United States. This decision, which is so important for the medical profession, resulted, therefore,

from a surprise vote. However, the bill will not become a law until it has been approved by the senate, which, no doubt, will examine it more closely. Its essential stipulations, which as yet are not definitive, provide for the compulsory enrolment of every practicing physician in a chapter to be created in each department. Each chapter would elect a council composed of from six to twenty-four members, depending on the number of voters, and this council would select a president and a committee on discipline. Every professional misdemeanor would be judged by this council and the following penalties are provided for: (1) warning, (2) reprimand, (3) suspension of practice for a period not to exceed one year, and (4) removal of the offender's name from the roster of the council and definitive revocation of his license to practice medicine. There is established also a tribunal of appeal, which consists of two magistrates, one of whom is the president of the council. The decisions of the council are transmitted officially to the prefect of the department in question, whose duty it is to enforce the penalty of suspension or of removal from the register of physicians.

### BERLIN

(From Our Regular Correspondent)

Dec 19, 1932

#### Predisposition to Colds

P. Schnudt, hygienist of Halle, undertook recently a series of experiments on the origin of ordinary colds in man. His main object was to discover what persons have a special predisposition for colds. He found that colds occur most commonly in persons whose heat regulatory system easily breaks down. When such a person is chilled for some time, there is brought about, through the action of the cold, exactly as in a normal person up to this point, a contraction of the blood vessels of the skin and also of the mucous membranes of the respiratory organs. This vascular contraction of the mucosae soon retrogresses, however, in a healthy person, whereas in the person who is predisposed to colds it continues much longer. Owing to this contraction of the mucous membranes, the defense forces can no longer be adequately mobilized, and as a result of the disturbance in the irrigation of the tissues, they become impaired and the ever present bacteria find a favorable field for their development. Schmidt's researches showed that only about 10 per cent of persons have a predisposition to colds, whereas most persons, soon after an intense cooling of the body, regain a normal temperature of the mucosae. In the experimental subjects who showed a pronounced tendency to colds, the restoration of normal body temperature was delayed and in some cases, was not completed within the time of the experiment, which was one hour. But in addition to the congenital or acquired predisposition to a persistent vascular contraction, following the cooling of the body, there is another presupposition necessary for the development of a cold or catarrhal manifestation, namely, the chronic infection of the mucous membrane with bacteria, such as pneumococci, streptococci and influenza bacilli. There is a big difference whether the mucous membranes harbor only a few degenerated micro-organisms or large numbers of virile germs. In the latter case the predisposition to inflammatory catarrhal manifestations is much greater if the protecting epithelium is damaged in which event the defense apparatus is impaired. The bacteria can penetrate more deeply the mucous membranes whereby the predisposition to colds becomes greater. This predisposition may be greatly enhanced by mordant speaking, dust, corrosive gases, and the like. Indeed such factors may produce the predisposition in persons who are not generally inclined to colds. The predisposition to colds may be accentuated also by nervous exhaustion and by psychic influences. The normal person will have a tendency to colds if special conditions deprive him of his proper heat regulation. A draft or unperceived current of air constitutes an

added cause. In the etiology of a cold, therefore, many separate and distinct factors play a part. Without doubt, a person can lessen his predisposition to colds by frequent long periods spent in the open air, but in some cases even that is of no avail.

#### Splitting the Atom and Treating Cancer

Among the new methods of attacking cancer, a procedure much talked of is associated with attempts at breaking up the atom by high-powered bombardment. While the breaking up of the atom is exceedingly important for the physicist, its use in therapeutics appears, for the present, doubtful, as Professor Holthusen emphasizes in the *Deutsche medizinische Wochenschrift*. It must not be overlooked that there are fundamental differences between splitting the atom, on the one hand, and the action of the rays on the cells. In the action of the rays on cancer cells there is some resemblance to the breaking up of the atom, since the rays serve to loosen the structure of the cellular molecules and thus to bring about their destruction. The decisive difference, however, lies in the amounts of energy required. Whereas these amounts must be extremely heavy in order to overcome the electrical forces in the atomic nucleus, the adhesive forces that bind together the components of the molecules of the cells are much less significant. In the roentgen and gamma rays that heretofore were used in treating cancer, the energies that are freed are sufficient to cause reactions which destroy the cells. From an increase of the total energy such as is attained by using the strongest electrical tensions, up to 1,000 kilovolts or more, no fundamental increase in the curative value can be expected. Holthusen writes: "The problem of combating cancer with radiating energy lies in the proper distribution of doses over a longer period of time. The important question is to ascertain for each carcinoma the best distribution of the doses over a period of time. Progress has been made in adapting the duration of the irradiation and of the intervals between doses to the rhythm of events taking place in the diseased tissue."

#### Visit of Russian Physicians

A group of Russian scientists headed by Vladimirski, director of the public health service in Russia, spent the period from Nov 28 to Dec 2, 1932, in Berlin. Before various scientific societies, the visitors delivered addresses on their specialties and on the organization of medical institutions in soviet Russia. Abrikosov, pathologic anatomist of Moscow, addressed the Society of Internal Medicine, Pletnev, internist of Moscow, and Burdenko, surgeon of Moscow, the Berlin Medical Society. At a specially organized meeting of the federal health bureau, Holtzmann, director of the government tuberculosis institute in Moscow, and Batkis, social hygienist of Moscow, delivered addresses. Finally, the Berlin Physiologic Society was addressed by Bogamoletz, president of the Academy of Sciences of the Ukraine, the chemist Zbarsky of Moscow, and Paladin, director of the biochemical institute in Kharkov. During the visit the more important Berlin hospitals and scientific institutes were inspected. The visit ended with an excursion to Munich.

#### Poliomyelitis in Relation to Quackery

The Prussian Ministry of Public Welfare has notified the authorities in the provinces that the outbreak of poliomyelitis has been the occasion for increased activity on the part of charlatans, who have been recommending, as measures for combating the disease, radium preparations, irradiating apparatus, and certain oils or liniments. Such methods of treatment are worthless or, of course, and may at times be dangerous. The provincial authorities are urged to enlighten the public concerning the danger of the recommendations of quacks in connection with infantile paralysis and to combat by every possible means the depredations of charlatans in this field of medicine.

## ITALY

(From Our Regular Correspondent)

Nov. 30, 1932

## Congress of Internal Medicine

The thirty-seventh Congresso nazionale di medicina interna was held in Rome under the chairmanship of Prof. Edoardo Maragliano.

## ARTERIAL HYPERTENSION

Professor Greppi of Milan discussed "Arterial Hypertension as an Independent Distinction and Disease," bringing out particularly, in his paper the difference between hypertensive excitability and the hypertensive state. The primary factor that sustains the arterial pressure and maintains it at a normal level in the adult is the tonus of the sympathetic nervous system, which is accomplished through the stimulating influence of the chemical composition of the blood (carbon dioxide) on the vasoconstrictive centers, and this, in turn, determines the tonus of the parasympathetic system, which exerts a hypotensive influence. The clinical aspects of hypertension are many. Young persons with hypertension show usually an increase in the glycemic index and fluctuations in the blood sugar level from one moment to the next. Lecithinemia tends also to be prominent in hypertension, but to a less extent than cholesterolemia, and at a later period. According to the speaker, essential hypertension is a syndrome and not a disease, and a familial morbid imprint has a great influence on its occurrence. Among the factors to be considered primarily are the emotions and certain endocrine influences.

The general discussion on this topic was opened by Professor Pende of Genoa, who brought out that it cannot be affirmed with certainty that persons with hypertension are those in whom the sympathetic nervous system is dominant. According to modern views pituitary extract constitutes the true hormone of the capillaries, whereas epinephrine is important only in an emergency.

Frugoni of Rome discussed the relation between paroxysmal hemocrania and hypertension. In explanation of the relation between the hypophysis and hypertension, he described a case in which, after sixteen years of severe hypertension, radiography revealed an abnormally deep sella turcica.

Aresa of Cagliari, basing his opinions on a study of 194 cases, pointed out the difficulty of classifying the various types of hypertension. Hypertension does not present a constant constitutional type or uniform endocrine manifestations.

Baglioni, physiologist of Rome, pointed out the difficulty of determining what are the etiologic factors in hypertension. Arterial pressure may be regarded as the resultant of the condition of the heart and the peripheral vessels but should not be regarded as a function in itself.

## AMEBIASIS

In the absence of Professor Izar of Messina, who was injured in an automobile accident, Prof. M. Ascoli of Palermo presented the paper on the second topic, "Amoebiasis." The only pathogenic amoeba that is well known is *Endamoeba histolytica*, of which the other varieties (*nana*, *minuta*, *dispar* and others) are only atypical forms. A pathogenicity of the other amoebas is rare. Amoebiasis may be regarded as a disease that is prevalent in all countries. In Italy it is endemic, with a wider diffusion in the islands and in southern Italy.

In the subchronic condition, which is peculiar to Italy, there are observed acute exacerbations during the summer and outbreaks connected with a transient increase in the pathogenicity of the parasite as a result of dietetic errors. *Endamoeba histolytica* is always pathogenic for man. The port of entry of the parasite is usually the mouth. Convalescents are rightly suspected of being carriers, also animals that come in contact with man. The disease amoebiasis evolves slowly, with many

exacerbations and remissions and long intervals of deceptive quiescence that might lead one to assume that the patient had recovered, whereas they are only periods of latency of the parasite. The diagnosis is based chiefly on the history and on the careful examination of the feces. The liver is the most frequent site of the secondary process, but pulmonary localizations are not as rare as was supposed. The speaker does not admit that there is such a thing as a gallbladder lesion independent of an hepatic lesion. The treatment of intestinal amoebiasis is confined to emetine, combined with arsenical preparations. It should be used early and repeated periodically.

In the general discussion, Professor Boeri of the University of Naples called attention to the danger of confusing non-pathogenic with pathogenic forms of amoeba. In doubtful cases it is advisable to resort to a test course of treatment. In addition to dysentery, amoebiasis may produce parametasternal inflammation. It should be noted that the use of emetine is not without danger.

Professor Pontano of Rome does not believe that there are amoeba carriers who are perfectly well. Even though examination of the feces does not reveal the parasites, a roentgenogram would often show a spastic colitis.

Pulle of Bologna claimed for the Clinica medica of Bologna the merit of having first called attention to the importance of amoebiasis in Italy.

## CHRONIC HEPATITIS

The third topic, "Chronic Hepatitis," was presented jointly with the Società di chirurgia, which held its annual congress simultaneously. Prof. L. D'Amato of the University of Naples said that the term "chronic hepatitis" is reserved by the anatomists and pathologists for the diffuse chronic inflammatory processes of the liver. Not all cases of chronic hepatitis can be placed under the head of cirrhosis. The importance of alcoholism in the pathogenesis of cirrhosis is still a live topic, and the conception of dyspeptic cirrhosis has not been entirely abandoned. Syphilis and tuberculosis are regarded as possible etiologic factors. Numerous substances have been employed experimentally to produce cirrhosis in animals, but the experiments have not given satisfactory results. Authors are not agreed on the classification of the various types of cirrhosis. The speaker cited the classification of Rossle, who distinguishes an atrophic form and a hypertrophic form of Morgagni-Laennec cirrhosis. The hypertrophic forms are then subdivided into the following classes: Laennec type, fatty, biliary, hematotoxic and angiotoxic. The types described by Eppinger are essentially three: the splenomegalic type without ascites or icterus, the splenomegalic type with permanent icterus, and the type accompanied by grave anemia. The author explained then the behavior of the spleen in hepatic cirrhosis, stating that splenomegalia is present in from 70 to 90 per cent of the cases. A clinical classification of cirrhosis of the liver is still open to objection. In conclusion, the speaker described the treatment of the forms of hepatitis and cirrhosis, emphasizing the dextrose-insulin treatment and the application of diathermy. He admitted that the treatment often fails to give good results.

The Società di medicina interna decided to hold the next congress at Pavia.

## Congress on Nipiology

The third Congresso nazionale di nipiologia was held in Perugia, under the chairmanship of Professor Cacace. The present laws in Italy make it necessary to provide aid for illegitimate children recognized by the mother. Statistics collected for the four-year period 1925-1929 showed that among children receiving aid the mortality ranges around 10 per cent, whereas the mortality of children of unknown parents is about 29 per cent.

Professor Allaria, pediatrician of Turin presented a paper on the hospitalization of nurslings. It is known that the admission of nurslings to hospitals sometimes proves to be more

harmful than useful for the child, because of the so-called hospital marasmus, which condition is due to infection and unsuitable diet. To obviate these disadvantages, special institutes are required for healthy and sick nurslings, respectively

Another paper, on aborted avitaminosis in the nurslings, was presented by Professor Frontali, pediatrician of Padua, who said that this condition is the result of a partial but not total deprivation of a definite vitamin factor. The absence of vitamin A gives rise to abortive types of keratomalacia. Also abortive types of avitaminosis due to the absence of vitamin B are not rare in nurslings on an artificial diet, in Italy. The vitamin factor has an influence on the exchange not only of carbohydrates but also of fats and may provoke skin changes in children. In all these conditions the vitamins, if suitably employed, are specific remedies and may give brilliant results.

Professor Pende, "medical clinician" of Genoa, read a paper on the relations between endocrinology and physiology. According to the speaker, the first year of life has two periods that may be termed endocrine crises. There is a postnatal hormone crisis, which continues to about the sixth month, and there is a crisis that begins with the second six months of life. In the first six months there occur hypothyroidism and physiologic hypoadrenalism, which explains the great intensity of metabolism, with increased assimilation and marked gain in weight in comparison with the successive years, but there is observed also a hyperfunctioning of the entire sphere of the parasympathetic system. There are also hepatic hypo-activity and pancreatic hyperactivity. The second—hormone—crisis consists in an active stimulation of the functioning of the thyroid, the suprarenals, the parathyroid and the pituitary body. These conditions are associated with a physiologic hyperactivity of the liver.

#### Case of Testicular Graft Taken to Court

At Naples, Professor Iannelli performed an operation in which he made a transplant from one human being to another, using a gland taken from a strong young man who gave his consent and grafted in a young man affected with testicular atrophy. The royal prosecutor, by virtue of his office, brought criminal charges against all the physicians who participated in the operation. The defense pleaded that the intervention had a scientific and a curative intent and that to attempt to check the ardor of experimenters would be contrary to the interest and progress of science. The defense brought out also that the donor would suffer no damage, as there would probably be produced a compensatory hypertrophy of the remaining gland, while the recipient secured at least temporary restoration of the sexual function. The court acquitted the defendants, and the decision was upheld by the court of appeals to which the royal prosecutor had appealed the case. A final appeal to the supreme court has now been taken.

#### Apparent Death in Tetanus

In addressing the Società medico-chirurgica della Romagna Dr. Mondolfo of Casena called attention to apparent death in tetanus and to the possibility of resuscitation by means of artificial respiration. A frequent cause of death in persons with tetanus is the sudden arrest of respiration due to spasm of the diaphragm and intercostal muscles. In such cases it is logical to apply artificial respiration to maintain a minimum of respiratory efficiency until normal respiration is resumed. In grave cases with contractions of prolonged duration even artificial respiration may be without effect. Dr. Mondolfo also discussed cases of apparent death in tetanus patients brought about by resuscitation by means of artificial respiration, emphasizing that this simple maneuver is not mentioned in treatises on therapy. He considered it worth while to remind general practitioners of the method as it will give good results in such cases.

## TURKEY

(From Our Regular Correspondent)

Ankara, Dec. 30, 1932

### Interview with an Obstetrician

Prof. Dr. Besim Omer Pasha, head of the department of obstetrics at the medical school, was the first obstetrician to engage in private practice in Turkey, when interviewed recently, he said that when he began practice, almost fifty years ago, attendance at a birth in a private home often was by imperial decree. Whenever complications arose in connection with deliveries among the wives of the sultan's official family they went to the sultan, who then issued a decree. So frequent became these decrees that Abdul Hamid earned the title of head midwife. "In the middle of the night his majesty's messenger would enter my bedroom holding the imperial decree right under my nose. 'You are required to attend the delivery at the given address and make the outcome known to his majesty at once,' it generally read. Often the home I was to visit was at a distance or across the water and the sultan would impatiently inquire why I had not reached there at a given time. Now and then I would not find in the house a woman to be delivered, the sultan's generosity had been taken advantage of. At that time, the midwife generally attended confinements. She was engaged months before the event, and presents in the form of soap, clothing and coffee were given her. These were purposeful presents. The soap meant we want you to be clean, the clothing, do not wear what you have worn at the confinement of somebody else, and the coffee, be wide awake when attending to your business. The old midwife was held in high esteem. At that time the physician was rarely called to attend a sick woman. He would be expected to diagnose the case by feeling the pulse over her carefully covered arm. Intervention in a case of confinement could not be undertaken without permission from the husband, who sometimes religiously refused. Once while I was attending a complicated delivery with two of my assistants, the Persian husband suddenly drew a revolver and threatened to shoot us if an accident happened. I managed to snatch the weapon and with it kept him outside the sickroom while the assistants continued their work. The most trying deliveries were those of the princesses in the palace, one never knew what might happen in case of an accident that no human being could prevent. The often irrational sultan would rather not have a male obstetrician so he required that I supervise the delivery from a distance. In case of absolutely necessary intervention, he was to be informed at once. There was often but a thread between performing one's duty and being classified as a criminal."

### Physicians' Fees

The question of physicians' fees, which is becoming more acute, was discussed at the physicians' friendly society in Istanbul recently. The low fee the general practitioner or the specialist receives today is still considered too high by the public although every physician gives much of his service to needy patients without remuneration. The younger men of the profession are at a great disadvantage in that people who are able to pay a fee invariably consult the academic professor whose service may be procured for a fee which is not much above that of a general practitioner. However, it called on in consultation by his colleagues the professor charges from 20 to 25 pounds. The question was taken to the Istanbul chamber of physicians, which proposes to divide physicians' fees into four groups: those of the general practitioner whose office is located in his home and whose practice is confined to a certain district; of the general practitioner with an office other than at his home; of the specialist; and of the academic professor. According to this plan the general practitioner whose office is located in his home is to receive 1 pound, the

equivalent of 47 cents, the general practitioner with an office other than at his home 2 pounds, the specialist 3 pounds, and the academic professor from 4 to 5 pounds. The younger men maintain that this would not entirely remedy the situation, because in many cases in which the nature of the disease would not require the service of a professor he would be charging from 5 to 10 pounds merely for an examination. The fixing of physicians' fees has long been considered by the ministry of health and social assistance, in whose hands the final decision of the matter now rests.

## RIO DE JANEIRO

(From Our Regular Correspondent)

Dec 15, 1932

### Prolapse of the Anorectal Mucosa in Children

Prof Durval Gama of the Surgical and Orthopedic Clinic of the Faculty of Medicine of Bahia, who has attended many children suffering from prolapse of the rectum, states that in the beginning only the mucosa is prolapsed and not the intestine as a whole. The prolapse is caused by aplasia, agenesis of the sphincter or simple atonia, followed by inveterate constipation or a constriction, after which the anorectal prolapse appears. This happens generally in children in poor health, undernourished, badly developed and living under bad hygienic conditions. Medical and hygienic measures rarely produce a cure. These should be used, however, in order to improve the general condition. If these measures fail, if complications arise (rectitis, ulceration of the mucosa, gangrene, infection, fever and so on) it is necessary to initiate surgical treatment. Professor Gama reviews the old procedures: ignipuncture affecting the thickness of the mucosa on a width of 4 or 5 cm, beginning at the cutaneomucosal limit, alcohol injections under the rectal mucosa recommended by Professor Roux, resection of the prolapsed mucosa, injections of liquid petrolatum in the pararectal cellular tissue, rectococcyx, colopexia, cerclage, anoplastica, and the operation of Heald. Professor Gama prefers the modified operation of Heald. He gives a laxative on the previous evening, enteroclysis with tepid water two hours before operation, ether or chloroform anesthesia in the dorsal position, irrigation with a 4 per cent solution of boric acid, the anal speculum then being replaced by a valve in order to support the anterior wall of the rectum, introduction of the left index finger in order to locate the point close to the sacrococcygeal angle and to guide a curved needle of Reverdin, armed with a number 3 silk suture, so that it pierces the posterior wall of the rectum and issues on the posterior surface of the coccyx, the same procedure being followed on the opposite side. These sutures are placed 1 cm from each other in order to fix the mucosa on the deeper layers. The sutures are taken out fifteen or twenty days later, and consolidation is produced by the formation of scar tissue between the mucosa and the submucosa.

### Anophelism Without Malaria

Dr Abel Vargas of São Paulo has published an interesting work on anophelism without malaria. It is well known that, although there is no malaria without anopheles mosquitoes, it is possible for these mosquitoes to exist in large numbers in certain regions that, however, remain free from malaria. This has been observed in Brazil in some localities near malarial foci, where sufferers from malaria and the anopheles mosquitoes are found together without giving rise to new cases. Some authors believe this can occur because of an immunity in the mosquito toward the plasmodium. But James and Roubaud have shown that the anopheles mosquitoes of a country from which malaria has long disappeared are easily infected. Contrary to what happens in the case of yellow fever, there is often no parallel between the number of carrier insects and the number of cases of malaria. The author gives as an example a locality in the state of Rio in which the splenic index is 25 per cent and yet anopheles mosquitoes are very rare. An electrical company proceeded to

construct a dam in a region where the author found anopheles mosquitoes (*A. argyrotarsus* and *A. tarsimaculatus*). Although all the workmen were gamete carriers, the region remained free from malaria. Other examples could be mentioned. The author thinks that the only possible explanation is that in malarial regions the anopheles mosquitoes are domestic and remain in the houses instead of leaving them after they have fed. This agrees with facts observed in Holland by Swellengrebel concerning dissociation between the functions of reproduction and nutrition in the mosquito.

### Madelung's Disease

The work of Prof Barboza Vianna on the subject of Madelung's disease has been recognized by the National Academy of Medicine. He reported the observation of a girl, aged 13, who, at the age of 11, had deformed wrists and suffered from pain that disappeared on rest. The result of a complete physical examination was negative. The Wassermann and Meimcke tests were negative. Roentgenograms revealed all the common signs of cubital dislocation, bad orientation of the carpal surface of the radius and especially marked curvature of the radius, in other words, "radius curvus of Destot." This indicated operation. A transverse osteotomy of the radius 6 cm above the styloid process was performed on the left side. A plaster-of-paris cast immobilized the member for one month and the result was perfect. Roentgenograms later showed that the secondary carpal and metacarpal dislocations and even a line reminding one of detachment of the radial epiphysis had disappeared. Professor Vianna attributes the radial curvature to general influences difficult to determine but especially to a condition of decalcification.

### Pyelitis of Pregnancy

Dr Pereira de Athayde, in a recently published work, states that pyelitis, or, better, pyelonephritis, is a serious complication of pregnancy. Its symptoms may at times be confused with appendicitis, cholecystitis, typhoid, and so on. Fortunately, the diagnosis has been made easier through catheterization of the ureter, through the use of dyes and especially through roentgenography. The causes have been known since the time of Cruveilhier: the part played by compression of the ureter by the uterus at the level of the innominate line, by the individual constitution and by a predisposition produced by pregnancy, it is necessary to consider the influence of colon bacilli either alone or associated with streptococci, staphylococci or pneumococci, the toxins of pregnancy, and, last, the influence of the sympathetic and vagus system. It is necessary as a preventive measure to keep pregnant women regularly under observation and to make complete examinations of the urine.

### Experiments on Yellow Fever

Hindle demonstrated in 1929 that the momentary introduction of the proboscis of an infected *Stegomyia* without suction of blood was enough to infect an animal with yellow fever. Drs H de Beaurepaire Aragão and A da Costa Lima of the Oswaldo Cruz Institute crushed infected *stegomyia* mosquitoes and highly diluted the virus up to 1:1,000,000 and with this they succeeded in infecting *Macacus rhesus* and produced in them the typical disease. The authors found that the bite of the mosquito through a piece of flannel, which removes the risk of infection from feces, produced the infection in the monkey.

### The Blood Serum Proteins in Ancylostomiasis

Drs Gilberto C Villela and J de Castro Teixeira of the Oswaldo Cruz Institute have analyzed the blood serum of twenty persons suffering from anemia due to infection with *ancylostoma* and whose clinical history they review. The examinations showed that the total proteins of the serum are diminished but that the percentage of globulin remains unchanged or is slightly increased. The fibrinogen is generally increased and the nonprotein nitrogen is normal.



## Marriages

CARL WESTALL AAGESON to Miss Alma Docken, both of Madison, Wis., at Nashua, Iowa, Oct 20, 1932

FRANK V NEWCOMBER, Elwood, Ind. to Miss Wilma Baker of Indianapolis, at Hartford City, Dec 25, 1932

MARSHALL E DINGMAN, Urbana, Iowa, to Miss Lucille Cue of Shellsburg, at Rock Island, Ill., recently

THEODORE JERVEY HOPKINS to Miss Jane Calvert McDowell, both of Columbia, S C, Nov 26, 1932

EUGENE C HYDEN, Auvier, Ky, to Miss Mary Margaret Richer of Fort Thomas, Dec 23, 1932

CLARENCE B SCHOOLFIELD, Carbon, W Va, to Miss Mary Louise Sectist of Bucyrus, recently

CHARLES EDWARD KITCHENS to Mrs Bess Davidson, both of Dequeen, Ark., Nov 2, 1932

CLIFFORD G ENGLE to Miss Lucile Crum, both of Henderson, Texas, Nov 4, 1932

HERMAN E. KULLY to Miss Ruth Ziev, both of Omaha, Neb., recently

JOHN F RAMSAY, Seattle, to Miss Lydia Gair Bushell, recently

## Deaths

William Phillips Graves ♂ for many years professor of gynecology at Harvard University Medical School, died at his home in Boston, January 25, of pneumonia. Dr Graves was born in Massachusetts, Jan. 29, 1870. He graduated from Phillips Andover Academy in 1887, from Yale University in 1891, and from Harvard University Medical School with honors in 1899. Dr Graves was a prominent athlete at Yale. He served his internship at the Massachusetts General Hospital and then went abroad to study in Vienna. In 1911, he was appointed professor of gynecology at his alma mater, a position he held until the present year, when he retired and became professor emeritus. He was a member and past president of the American Gynecological Association, a member of the New England Surgical Association and the New England Roentgen Ray Society and a fellow of the American College of Surgeons. He was consulting gynecologist to the Boston Lying-in Hospital and, since 1907, chief surgeon to the Free Hospital for Women at Brookline. Dr Graves was the author of many medical publications the most widely known being his textbook on 'Gynecology,' which was translated into foreign languages. He practiced medicine in Boston for many years and just recently was made an honorary fellow of the British College of Obstetricians and Gynecologists.

Clarence Joseph McCusker ♂ Portland Ore. Rush Medical College Chicago 1903 clinical professor of obstetrics and head of the department, University of Oregon Medical School, formerly secretary of the Oregon Board of Medical Examiners, past president of the Oregon State Medical Society and the Portland City and County Medical Society fellow of the American College of Surgeons on the staffs of St. Vincent's Hospital and the Juvenile Hospital for Girls chief of the obstetrical clinic Multnomah Hospital aged 58, died Dec 24, 1932, of nephritis.

James Henry P Culpepper ♂ Norfolk, Va. University of Pennsylvania School of Medicine Philadelphia 1905 past president of the Seaboard Medical Association of Virginia and North Carolina member of the Southern Surgical Association fellow of the American College of Surgeons formerly on the staff of the Sarah Leigh Hospital aged 50 medical director of the Norfolk Protestant Hospital where he died Dec 25, 1932 following an operation for appendicitis.

Gayfree Ellison ♂ Norman Okla. Rush Medical College Chicago 1903 fellow of the American College of Physicians and the Society of American Bacteriologists professor of epidemiology and public health University of Oklahoma School of Medicine past president and secretary of the Cleveland County Medical Society medical director of the students' infirmary of the University of Oklahoma aged 57 died, Dec 22, 1932.

James J Guerin Montreal Que Canada M.R.C.S. (Lond) and F.R.C.P., London 1878 emeritus professor of

clinical medicine, University of Montreal Faculty of Medicine, at one time mayor, member of parliament and cabinet minister, served for over half a century on the staff of the Hotel Dieu, being president of the medical board of that institution, aged 76, died, Nov 10, 1932.

Clarkson Seaman Mead, Port Chester N Y, College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, New York, 1885, member of the Medical Society of the State of New York, aged 73, died, January 5, in Greenwich, Conn., of bronchial asthma and paralysis agitans.

Paul Stafford Mitchell ♂ Iola Kan., Hering Medical College, Chicago, 1899, College of Physicians and Surgeons, Chicago, 1900, member of the House of Delegates of the American Medical Association in 1911 past president of the Kansas Medical Society, aged 57, died, Dec. 29, 1932, of pernicious anemia.

Guy Jerome Hall, Smithfield, Ill., St. Louis College of Physicians and Surgeons, 1909, member of the Illinois State Medical Society, served during the World War, formerly mayor of Smithfield, aged 54, died, Dec 26, 1932, in the Graham Hospital, Canton, of uremia and chronic nephritis.

Ralph Deems Fox ♂ Bloomington, Ill., University of Michigan Medical School, Ann Arbor, 1903 member of the American Academy of Ophthalmology and Oto-Laryngology, on the staff of the Brokaw Hospital, Normal, aged 55, died, Dec 31, 1932, of carcinoma of the pleura.

Jacob Frederick Brendel, Murray, Neb., Lincoln Medical College of Cotner University, 1903, member of the Nebraska State Medical Association, aged 56, died, Dec. 31, 1932, in a hospital at Omaha, of pneumonia, perinephritic abscess and hypertrophy of the prostate.

Le Roy Francis Herrick ♂ Oakland, Calif., Kentucky School of Medicine, Louisville, 1893 California Eclectic Medical College San Francisco, 1894 aged 71 medical director of the Berkeley (Calif.) General Hospital, where he died, Dec 19, 1932, of septicemia.

George Rufus Davis, Marlboro, Mass. University of Vermont College of Medicine, Burlington 1908, member of the Massachusetts Medical Society, aged 52, died, Dec. 26, 1932 in a hospital at Worcester, of cardiovascular renal disease and cerebral hemorrhage.

Wie Kim Lim ♂ Detroit Detroit College of Medicine and Surgery, 1921 member of the Radiological Society of North America aged 41, on the staff of the Jefferson Clinic and Diagnostic Hospital, where he died, Dec 30, 1932, of pneumonia.

Frank J McGuire, New Haven Conn., Yale University School of Medicine, New Haven 1897, member of the Connecticut State Medical Society on the staff of the Grace Hospital Society aged 61 died suddenly, Dec 22, 1932, of heart disease.

Daniel Francis Donoghue, Holyoke, Mass., Albany (N Y) Medical College 1880, member of the Massachusetts Medical Society, formerly member of the school board, aged 76 died Dec 23, 1932, of arteriosclerosis and chronic nephritis.

Arnold Carpenter Moon, Williamsburg Iowa State University of Iowa College of Medicine, Iowa City, 1884, member of the Iowa State Medical Society aged 72, died Dec 13, 1932 in Cedar Rapids, of arteriosclerosis and nephritis.

Rolla L Thomas, Cincinnati, Eclectic Medical Institute, Cincinnati 1880, dean, member of the board of trustees and formerly professor of practice of medicine at his alma mater, aged 75, died, Dec 28, 1932 of cerebral hemorrhage.

Frank Leslie Ferren, Westbrook, Maine, Medical School of Maine Portland 1906, member of the Maine Medical Association school physician and city physician of Westbrook for six years aged 58, died, Dec. 27, 1932, of influenza.

John William Lauferweiler ♂ Minster, Ohio, Ohio State University College of Medicine Columbus, 1924, member of the county board of health aged 31, died, Dec. 20, 1932, in St Rita's Hospital Lima of a throat infection.

Ida M Shimer Thompson, Hartford Conn. Woman's Medical College of Pennsylvania, Philadelphia, 1885, aged 69, died, Dec 27 1932, in West Hartford of sarcoma with metastasis to the lumbar spine and pelvic bones.

James Frank Kelley, Salem Ind Hospital College of Medicine Louisville, Ky 1893 member of the Indiana State Medical Association for many years county coroner, aged 63 died Dec. 28 1932, of angina pectoris.

James W Dawson, Yalesville, Conn. Toledo Medical College 1894 member of the Connecticut State Medical Society, aged 85 died Dec 15 1932 in the Masonic Home Hospital Wallingford of appendicitis.

The work done by the Committee on the Costs of Medical Care has aided materially in the accomplishment of at least one service. It has helped to bring the outposts of the medical profession—the specialists and the institutional men—back to their original position of support to that foundation of the profession, the family doctor.

H. A. BURNS, M.D., Ah-Gwah-Ching, Minn.  
Superintendent, Minnesota State Sanatorium

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### INFECTIONS OF HAND

*To the Editor*—A woman, aged 47, came to the hospital with a markedly swollen left hand, tender on palpation, with the fingers flexed. The swelling had extended somewhat under the annular ligament, as demonstrated by the tenseness and slight swelling immediately above the wrist. She complained of severe pain, and she abstained when possible from using this hand. The swelling was present on both palmar and dorsal aspects, with an obliteration of the normal palmar concavity of the hand. The fingers also were tender and swollen, and painful when extension was attempted. There was no redness present anywhere. The history was rather vague. The patient does not remember any definite pin prick or cut but thinks the thumb was the origin of the trouble and recalls vaguely some puncture sustained a few days before on her thumb. The thumb was not swollen more than the other fingers. The leukocyte count on the first day of entrance was 14,220, with 81 per cent polymorphonuclears and 17 per cent lymphocytes. The urine revealed a 4 plus albumin, with hyaline casts and a faint trace of sugar with 20 drops. The Wassermann test was not made. Because of the questionable diagnosis with no evidence locally of pus, incision was delayed for four days. Hot applications were made continuously, with no relief or evidence of localization. The temperature fluctuated daily from 98.6 to 100.8 F (orally). As pain was continuous, with no relief, one incision was made on the palmar aspect of the hand, between the fourth and fifth fingers. No pus was present when the various sheaths and tendons were probed. The subcutaneous tissue seemed indurated and thickened. A gutta serena drain was inserted and hot applications were made. The patient has been relieved somewhat but still complains of pain. Morphine was used to quiet her pain. No epitrochlear nor axillary lymphadenopathy was present. The fifth digit at present is more reddened and swollen than the others. The patient still continues to hold her hand in a "claw" position. I would appreciate any suggestion which you may offer regarding this case, as far as diagnosis and treatment are concerned.

M. D., Illinois

*ANSWER*—From the facts as given it is impossible to make an accurate diagnosis as to the condition present. It could be a diffuse cellulitis of the hand and lower end of the forearm secondary to an abrasion or cut that had escaped the patient's attention. It could be, and this possibility seems less likely, an infection of the flexor tendon sheath of the thumb, which had extended upward to the wrist, crossed to the expansion of the tendon sheath of the little finger, viz., the ulnar bursa, and extended distad in the hand within the flexor tendon sheath of the little finger. In the latter event one would expect a higher fever and a more severe systemic reaction than is suggested by the facts given, although no definite mention is made as to the patient's general reaction other than pain which necessitated morphine to relieve it.

A third and still less likely possibility is a metastatic infection from some other part of the body. This does not commonly occur in the soft tissues of the hand, but occasionally one sees patients with an acute swelling and tenderness of the hand and lower end of the forearm which simulate closely infection of the fascial spaces of the palm but which are in reality due to a diffuse cellulitis secondary to a metastatic infection from the teeth, tonsils, mastoid or some other primary focus.

The notes state that no pus was present when the various sheaths and tendons were probed during an exploratory incision. Probably the most certain way of determining the presence of pus within the tendon sheaths of any of the fingers in cases of doubt is to secure a bloodless field with the help of a constrictor or blood pressure apparatus, and with the patient anesthetized with nitrous oxide or ethylene to cut down carefully to the tendon sheath. If there is pus within the sheath, the synovial covering will have lost its transparent appearance, it will appear cloudy and distended with fluid and it will not be possible to see the white, glistening tendon shining through it. When such a sheath is opened, the pus escapes quickly.

Unless, however, one has a bloodless field and the patient is completely anesthetized it may be quite impossible to recognize the sheath, particularly in the palm, where the tendon sheaths of the thumb and little finger lie rather deep and partially hidden by overlying muscle and fascia.

In the first possibility suggested, the symptoms should clear up with the continued application of warm, wet, sterile dressings. If the infection is within the tendon sheaths, definite symptoms of its presence should appear quickly. The most important of these is the exquisite pain on attempting to extend the affected finger and the numbness of the palm and fingers, which appears comparatively early because of the pressure of inflammatory exudate on the median nerve. Metastatic infections may subside completely with rest and warm wet dressings, or definite evidence of localization may appear subsequently.

### CHANGES IN MILK PROTEIN AFTER BOILING

*To the Editor*—I am especially interested in the changes that may be produced in milk protein by prolonged boiling (from six to eight hours) or by a shorter period of heating under pressure to from 108 to 120 C. It is said that certain infants sensitive to raw cow's milk can take milk that has been thus treated, owing to certain changes produced in the milk protein by heat, but I have never been able to find any one who knew just what these changes are, or indeed whether there are any changes other than coagulation of the lactalbumin. Please omit name.

M. D., Massachusetts

*ANSWER*—The nature of the changes that take place in milk when it is boiled is by no means fully known or clearly explained. The temperatures indicated bring about a certain rearrangement and alteration of the mineral balances of milk, which in turn have a direct bearing on the character of the coagulum of the heated versus the raw milk. The heating of milk renders certain soluble phosphates insoluble. Various hypothetical explanations have been advanced as to the exact reactions taking place, but all such explanations require further evidence to complete the picture. It is concluded, and probably rightly so, that this alteration in mineral balance is the primary cause of the difference in character of the coagulum and coagulability of heated versus raw milk. The coagulum of the heated milk exists as relatively fine particles which do not readily coalesce into large masses in vitro or in the stomach. The obvious explanation as to the greater digestibility of heated milk is that these finely divided particles present a greater surface area to the digestive juices.

At the temperature indicated and even at the boiling temperature for only a few moments, a considerable proportion of the lactalbumin is coagulated. Probably this coagulation of the lactalbumin in the presence of the casein and natural salt balances has a mechanical effect which contributes to a degree in causing the characteristic coagulum of heated milk. It remains to be learned whether this associated effect is the primary cause or the secondary result of alteration in the mineral balance. Presumably the physical effect of the coagulation of the albumin must be considered as well as the alteration in mineral balance.

In addition to these possible phenomena it is probable that some "denaturing" effect takes place in the casein as a result of exposure to high temperature. This "denaturing" effect is only a blanket term used for convenience to cover what is not known regarding the exact mechanism of the changes. From the physical standpoint, however, it is perfectly conceivable that an effect analogous to dehydration of the protein may take place.

'Altered' milk or milk that has been subjected to prolonged heat treatment and/or dried milk is recognized as less allergic than raw, pasteurized or quickly boiled milk. Milder cases of hypersensitivity to milk may be controlled by the use of milk that has been subjected to a moderate heat treatment, severer cases may be relieved by using milk that has been subjected to prolonged heat treatment in which the proteins are more profoundly altered.

It is a common property of proteins that their chemical structure and properties are altered by physical and chemical treatments. These changes are referred to as "denaturation" and the resultant proteins as "denatured" proteins. Derived proteins are derivatives formed through hydrolytic changes of the original protein molecule and result from the action of acids, alkalis, heat and enzymes. Heating at temperatures of from 125 to 150 C in an autoclave for several hours is a common procedure for accomplishing hydrolysis by heat alone. Denaturation is an intramolecular change and occurs more rapidly at higher temperatures and higher concentrations of hydrogen and hydroxyl ions.

Although the phenomenon of denaturation has been studied for many years there is still no agreement concerning the nature

of the change in the protein molecule. Investigations lead to the assumption that denaturation involves the hydrolysis of some internal linkage in the protein molecule. Anuno or carboxyl groups are not liberated, however, which indicates that denaturation does not involve peptide linkage.

#### TECHNIC OF INCREASING WEIGHT

*To the Editor*—A woman aged 21 has been underweight for a number of years. All her family are thin but not necessarily underweight. Her height is 5 feet 3½ inches (162 cm), weight 95½ pounds (43.4 kg) dressed but in her stocking feet. I have been treating her for about one year attempting to increase her weight. During this period I have used drugs, tonics, diet, regular exercise, regular habits, insulin and suggested pleasant types of recreation. In general her health is good although she states that she never seems to feel ambitious or as she states it 'peppy'. During a period of about two months while on insulin she says she felt unusually well. She is not on insulin now. Examination of the urine and blood gives negative results. Her appetite is usually excellent. Please omit name. M D West Virginia

*ANSWER*—This story sounds rather typical of certain persons who under ordinary conditions seem destined to unusual thinness. There is a possibility, not covered by the notes on the case, of some endocrine dyscrasia. One would want to know the basal metabolism, the menstrual history, and whether there are any stigmas of endocrine disturbance, such as an unusual abundance of hair, dry skin, or trophic disturbances of the nails. If there are evidences of some endocrine imbalance, an attempt at endocrine therapy is advisable, depending on the facts. If, on the other hand, the complete physical examination reveals no evidence of glandular disturbances, the problem of therapy is going to be difficult. A continuation of insulin in doses large enough markedly to increase appetite is almost sure to be followed by gain in weight. There is not much accomplished unless insulin is used in sufficiently high doses to make the patient want to take considerable extra food. Frequently this means 10 units three times a day, although of course the minimum necessary to attain results should be used. At times the increased appetite produced by insulin continues in the post-insulin period. Certainly there is no way of increasing weight other than by a food intake greater than the individual's energy expense.

#### SOLUTIONS OF SODIUM LACTATE

*To the Editor*—How is molecular sodium lactate prepared and in what strength is it used intravenously? Is this solution what is known as Hartmann's solution when Ringer's is added to it? How does it compare with 5 per cent sodium bicarbonate when each is given intravenously in raising the carbon dioxide combining power? Is not its action quicker than the sodium bicarbonate solution? Please give definite instruction for preparing this solution. Why wouldn't it be better to use in diabetic acidosis than the sodium bicarbonate solution? Please omit name.

M D, Texas

*ANSWER*—Chemically pure lactic acid 85 per cent, such as is marketed by the Mallinckrodt Chemical Company, is about 10 molar in strength. Because of its concentration it also contains some of the anhydride of lactic acid. To convert it to neutral molar sodium lactate, it is necessary, first, to hydrolyze the anhydride and then to neutralize all the acid with sodium hydroxide. In detail the procedure is as follows: For 1000 cc of molar sodium lactate 100 cc of chemically pure 85 per cent lactic acid is taken. 600 cc of distilled water and a small amount of phenol red (phenolsulphonphthalein indicator) are added to this 40 per cent sodium hydroxide (approximately tenth normal) which has stood long enough for the sodium car-

the plasma and intercellular water. The effect of sodium lactate is more gradual, requiring about two hours for complete conversion into sodium bicarbonate. This more gradual effect is one of the principal advantages of sodium lactate (Hartmann, A F, and Senn, M J E. Studies in the Metabolism of Sodium *r*-Lactate: I. Response of Normal Human Subjects to the Intravenous Injection of Sodium *r*-Lactate, *J Clin Investigation* 11 327 [March] 1932).

Sodium lactate is much to be preferred in the treatment of acidosis, particularly diabetic acidosis, as it may be given intravenously, subcutaneously or intraperitoneally more safely in larger doses than sodium bicarbonate can be given (Hartmann, A F, and Senn, M J E. Studies in the Metabolism of Sodium *r*-Lactate. II. Response of Human Subjects with Acidosis to the Intravenous Injection of Sodium *r*-Lactate, *J Clin Investigation* 11 337 [March] 1932).

#### HYPERCALCEMIA AND THE PARATHYROID GLANDS

*To the Editor*—Does an increase in bone calcium in a child indicate a hypoparathyroid or a hyperparathyroid condition? What is the exact relation between the parathyroid and bone calcium? What is the correct treatment for a child with excessive calcium in bones? The case I have in mind shows nothing but excessive bone calcium. Please omit name.

M D South Carolina

*ANSWER*—The writer of the inquiry does not say how he discovered the increase of bone calcium in the living child. It may be assumed, however, that the condition was ascertained by roentgen examination. If the parathyroids are completely extirpated, or if a hypocalcemia occurs from any cause, there is not an increased deposition of bone salts as might be expected. The bones in hypoparathyroidism are of poor quality and the teeth are defective, and the concentration of calcium in the blood serum is abnormally low.

In case of tumor of the parathyroid or the administration of parathyroid extracts, the evidence seems to show that the hypercalcemia that ensues is the result of the mobilization of calcium from the bones and the calcium is deposited in the blood, producing a high serum calcium.

There is a condition described by Barr, known as hyperparathyroidism, which is characterized by rarefaction of bone, increased calcium in the urine and a hypercalcemia, usually secondary to parathyroid hyperplasia or parathyroid tumor.

The use of viosterol, quartz lamp treatment, sunlight and, to a lesser degree, cod liver oil tends to heal rickets by causing a deposition of calcium in the bone and by increasing the calcium level of the blood serum. While this improvement in rickets and the increase in blood calcium may be demonstrated clinically, it has not been shown what the effects of these remedies are on the function of the parathyroid gland itself. From what has been stated, it is obvious that the relationship between the parathyroid gland and an excess of calcium in the bone is difficult to establish, if it exists at all. For the same reason it is not possible to postulate dogmatically about the treatment of a condition that has been so little studied, probably because of its rare occurrence. It seems that it would be justifiable to say that all known substances that increase the blood calcium, such as viosterol, the quartz lamp and, to a lesser degree, cod liver oil should be avoided. It has also been suggested that if the diet is of such a kind as to yield an acid ash, the elimination of calcium in the urine will be increased. Consequently a prolonged ketogenic diet with the production of ketosis may increase the elimination of calcium and result in a loss of this substance from the bone.

#### UREA DETERMINATION—MICROCOLORIMETERS—OXIDASE TEST IN GONORRHEA

*To the Editor*—I should like to have your opinion concerning suitable methods for a general practitioner in determining values for blood sugar, urea, uric acid and creatinine. In this connection, please give me your opinion concerning the following: 1. The Hensch-Aldrich method for determination of blood sugar and urea. 2. A. G. Steifel's microcolorimeter. 3. The Hellige microcolorimeter. 4. Is much value placed in the oxidase reaction in gonorrhea (*J N O Price in the British Medical Journal* Feb 2 1929) particularly in connection with prognosis or as a diagnostic aid in gonorrhea? Here my interest concerns the chronic cases requiring the clinic patients with a continuing discharge but a negative smear.

W M PFEIFFER M D Quebec

*ANSWER*—1. There is no Hensch-Aldrich method for the determination of blood sugar. Their method is for the mercury combining power of blood, which gives an index of the urea retention of the body. By means of a formula a good approximation of the blood urea can be made. With certain modifications it is also applicable for use on saliva and other body fluid. The value of the method has been confirmed in

a large number of articles, mostly in foreign journals. Suggested references are White, E. C., and Ricker, H. C. Experience with the Hensch-Aldrich Method for Determining Blood Urea, *THE JOURNAL*, April 20, 1929, page 1324, and Fairley, K. D., and Splatt, Beryl. A Simple Technic for the Estimation of Blood Urea. *The Hensch-Aldrich Method*, *M. J. Australia* 1:517 (May 8) 1926.

The authors of this method do not claim that it is a highly exact method but regard it as a useful chemical and clinical procedure for the general practitioner. Apparatus for this test is put out by the LaMotte Chemical Company and also by Hynson, Westcott and Dunning, both of Baltimore. The LaMotte Company also puts out apparatus for the determination of blood sugar by a method adapted for small office laboratories.

2 The Shestel microcolorimeter has just been put on the market and is described in a recent issue of the *Journal of Laboratory and Clinical Medicine*. It is made by the MacGregor Instrument Company, Needham, Mass. It has been so recently put on the market that information is not available as to its merits. The principle of it seems to be quite satisfactory.

3 The Hellge microcolorimeter was, of course, put out years ago. Microcolorimeter methods generally are only roughly accurate and this type of colorimeter is not as practical as any Duboscq colorimeter, such as the Klett Bio-colorimeter.

4 We are not familiar with the oxidase reaction in gonorrhea and do not believe that it has obtained any widespread recognition.

#### HYPERSUPRARENALISM, HYPERTHYROIDISM OR OTHIR DYSFUNCTION

*To the Editor*—Is there any test for distinguishing the syndrome of hypersuprarenalism from an atypical hyperthyroidism? A patient has moderate exophthalmos, an inconstant tremor, tachycardia (from 110 to 120 beats per minute) and premature graying of the hair. Loss of weight has not been marked or progressive. The thyroid gland is not enlarged. The heart has not suffered apparent damage after five years of the illness, the present blood pressure being 115 systolic and 75 diastolic. There is a marked lack of perspiration even on exertion during hot weather. Sudden noises and emotional excitement result in a rise of the pulse rate often to 170 per minute. Coitus results in nausea and vomiting. Atropine administered preliminary to tonsillectomy six years ago resulted in symptoms of collapse. Rest removal of foci of infection and the use of iodine have not influenced the symptoms at all. Do these symptoms best fit hyperthyroidism, hypersuprarenalism or some other type of sympathicotonia? The patient is a devoted wife and mother, 26 years of age. There are apparently no domestic difficulties. The basal metabolic rate is plus 14. The skin is not excessively oily. There is no virilism and no palpable abdominal mass. There is an appearance of premature aging and graying of the hair. What is the present status of the use of x-rays in the treatment of hyperactivity of the suprarenal glands? Please omit name and address.

M. D., Georgia

*ANSWER*—With the data at hand neither the diagnosis of hypersuprarenalism nor that of atypical hyperthyroidism is justified. The details that are given, however, are unquestionably inadequate.

There is no single test that will differentiate between hypersuprarenalism and atypical hyperthyroidism, but a striking increase in the basal metabolism would be preponderantly in favor of the latter. The moderate exophthalmos and tachycardia with an inconstant tremor, suggest hyperthyroidism, but the absence of sweating, particularly on exertion during hot weather, and the lack of result from iodine therapy would seem to suffice to nullify these. The crucial test should be made, namely, determination of the rate of basal metabolism. If this is excessively high further studies from the standpoint of hyperthyroidism should be followed up, with persistent treatment directed along this channel.

Nothing in the record suggests hypersuprarenalism. Hirsutism and virilism and a change toward the masculine are lacking, as they are not mentioned. If the skin is greasy, acne is present and if with these two things there is a questionable abdominal mass in either flank this possibility also should be pursued further. Any large suprarenal tumor will displace the kidney, so that a pyelogram might indicate its presence.

The exaggerated response to noises and emotion suggests an unstable nervous system, as does the response to intercourse. A functional basis for this nervousness should not be overlooked. Careful search should be made for everything pertaining to domestic difficulties, maladjustment or the existence of some unusual toxemia. This type of picture is not infrequently associated with a low grade continuous fever, and if this has not been excluded the temperature curve should be carefully studied. Roentgen treatment of the suprarenal glands

may result in striking clinical improvement when cortical tumors are present. It controls symptoms and retards the disease but is not curative in nature. The lack of sweating in itself may be significant. This may be followed later by extreme asthenia and degenerative changes in the muscle.

#### MATERIALS FOR ARCHES AND FOOT SUPPORTS

*To the Editor*—Can you tell me where I can buy a satisfactory material to use in foot supports and arches? Some shops make satisfactory supports but charge a lot for them. Some material that will stand up after being molded to the feet and covered is what I want.

Donald F. MacDonald, M.D., Taunton, Mass.

*ANSWER*—Various materials, including metal, celluloid, rubber, wood and felt, have been used for making arch supports. The metallic materials are german silver, aluminum, duralumin and monel metal. In order to fashion these, a lead block secured in an anvil and a ball peen hammer are necessary. Celluloid is used in two ways. It may be obtained in large sheets like blotting paper, or scraps of celluloid may be dissolved in acetone, making a thick cream. When sheet celluloid is used the pattern is cut, and after it is made soft, by submersion in boiling water, it is removed and molded to the plaster cast of the foot by the hands, which are protected by heavy rubber gloves. When the celluloid-cream method is used, the cream is applied in successive layers, impregnating crinolin or stockinet. "Moving picture glue" is sometimes used for this purpose.

Rubber is used both raw and molded. It can be obtained in sheets of hard rubber, soft rubber and sponge rubber. It is cut, trimmed and either filed or put on the emery wheel.

Wood is used in very thin layers of veneer, which are cut, trimmed and glued in successive layers.

Felt is obtained in sheets of various thicknesses, resilience and colors.

Most of these materials can be used with or without a covering of leather or an insole. In order to make a corrective appliance, one should have a plaster-of-paris model of the foot which is trimmed and shaped, so that the arch support may exert a corrective force.

#### STERILITY

*To the Editor*—A barren marriage has occurred in a woman, aged 32, weighing 230 pounds (104 Kg.) with good general health. Menstruation has always been regular and without difficulty. At the age of 19 she became pregnant but aborted at three months. This by a former marriage. With this exception the history is negative. Physical examination reveals no pelvic abnormality. The Wassermann reaction is negative. The husband is 34 years old, well developed and in good health. By a former marriage he had one child and his wife died. Examination of the semen on three occasions reveals many spermatozoa, normal to all appearances but amotile and apparently dead. The semen was kept at body temperature for the thirty minutes after ejaculation in a condom. His Wassermann reaction also is negative. He admits having gonorrhea fifteen years ago but without complications and no epididymitis. Please omit name.

M. D., Ohio

*ANSWER*—A condition, as referred to, in a patient with a gonorrheal history gives as a rule a rather favorable prognosis. As therapeutic measures, systematic dilation of the urethra with metallic sounds of increasing size, regular massage of the prostate and seminal vesicles and medical diathermy, the active electrode to be placed in the rectum, may be employed. Repeated intramuscular injections of compounds derived from the anterior half of the pituitary body quite often have a favorable influence on restoring motility of the spermatozoa. It is, of course, understood that the permeability of the epididymian tubes is ascertained by proper investigation.

#### SERVE

*To the Editor*—Will you please give me some information about "Serve," a product of the Serve Laboratories Ltd., Hollywood, Calif.

M. D., New York.

*ANSWER*—No report on "Serve" has been made either by the Council on Pharmacy and Chemistry or by the A. M. A. Chemical Laboratory. In December, 1930, the Burnham Snow Products Company, Hollywood, Calif., distributors of "Serve," inquired regarding the details of procedure in the submission of a product for inclusion in New and Nonofficial Remedies. The firm was sent these details but did not submit "Serve" for consideration by the Council.

In the advertising for this product there appears the following statement in regard to composition: "The formula of this antiseptic includes boric acid, quinine, chinosol, oxyquinoline, zinc

phenolsulphonate, scientifically prepared in proper proportions and blended together by our exclusive, scientific process. This statement is nonquantitative and therefore essentially meaningless. It includes both Chinosol—which is oxyquinoline sulphate—and “oxyquinoline.”

Recently the product was found misbranded by the Food and Drug Administration of the United States Department of Agriculture (Notice of Judgment 18946, June, 1932). Analysis by the government chemists showed the product to consist essentially of boric acid (86 per cent), oxyquinoline sulphate (Chinosol), and quinine sulphate, perfumed.

#### DRUGS INFLUENCING SEXUAL DESIRE

*To the Editor*—What status if any has saltpeter as an anaphrodisiac? Many stories state that this chemical is used in the army, in prisons and in other institutions for this purpose. It was claimed that the vehicle for its administration was coffee. It seems to me that the dose would have to be exceedingly small if the mixture was to remain palatable. Where might I find detailed information on the use, action and dangers of this and other anaphrodisiacs and aphrodisiacs? These questions are discussed frequently among my colleagues and occasionally with patients, and it seems that there is only vague information available on the subject.

LAMBERT J. NEJDL, M.D., Chicago

**ANSWER**—Saltpeter acts as an anaphrodisiac, if it acts this way at all, by diluting the urine and making it less irritating just as on the other hand irritant drugs excreted into the urine, such as cantharides, capsicum and volatile oils, may reflexly excite the sexual organs. In “Pharmacotherapeutics” by Solis-Cohen and Githens (New York, D. Appleton & Co., 1928) may be found a chapter on “Drugs Influencing Sexual Desire,” which might answer some of the points under discussion. The reputed use of saltpeter as an anaphrodisiac is not based on scientific data.

#### USE OF CAUSTICS IN NOSE FOR HAY FEVER

*To the Editor*—In the October 19 issue of the *Medical Journal and Record* there was an article by Dr. G. F. Chandler concerning hay fever being cured by carbolic acid (full strength) applied to the nasal mucosa. Is this method safe? In Cushman's textbook on pharmacology I find that phenol causes irritation and necrosis of mucous membranes. I should appreciate learning more about this method of treatment. If this is published please omit name.

M.D., New York

**ANSWER**—The use of cauterizing agents of one type or another for the relief of hay fever and other hyperesthetic conditions of the nose is well known. Such agents may be the actual cautery, chromic acid in strengths of from 50 to 100 per cent, full strength trichloroacetic acid or phenol (carbolic acid), full strength. It is difficult to believe that there is any special virtue in phenol. Applied to certain so-called sensitive spots with care and the caustic action being neutralized quickly with alcohol, phenol should have no more and no less virtue than any of the other agents named. There are few men who will agree that hay fever can be cured by the application of phenol or any other substance locally in the nose.

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

- ALASKA Juneau March 14 Sec. Dr. Harry C. DeVigne Juneau  
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS Milwaukee, June 12 Sec. Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago  
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The written examination will be given in cities of the United States and Canada where there is a Diplomat who may be empowered to conduct the examination, April 1. The general oral, clinical and pathological examination will be held in Milwaukee, June 13 Sec., Dr. Paul Titus 1015 Highland Bldg., Pittsburgh  
AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee, June 12 Sec., Dr. W. P. Wherry 1500 Medical Arts Bldg., Omaha  
CALIFORNIA Los Angeles Feb. 27 to March 2 Sec., Dr. Charles B. Pinkham, 420 State Office Bldg. Sacramento  
CONNECTICUT Basic Science New Haven Feb. 11 Prerequisite to license examination Address, State Board of Healing Arts 1895 Yale Station, New Haven Regular Hartford March 14-15 Endorsement Hartford, March 28 Sec., Dr. Thomas P. Murdock 147 W. Main St. Meriden Homeopathic New Haven, March 14 Sec., Dr. Edwin C. M. Hall 82 Grand Ave. New Haven  
MAINE Portland March 14-15 Sec. Dr. Adam P. Leighton Jr., 192 State St., Portland  
MASSACHUSETTS Boston, March 14-16 Sec., D. Stephen Rushmore, 144 State House, Boston  
NATIONAL BOARD OF MEDICAL EXAMINERS The examination will be held in centers where there are five or more candidates Feb. 13-15 Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia  
NEW HAMPSHIRE Concord, March 16-17 Sec., Dr. Charles Duncan, Concord  
OKLAHOMA Oklahoma City March 14-15 Sec., Dr. J. M. Byrum, Shawnee  
PUERTO RICO San Juan, March 7 Sec. Dr. O. Costa Mandry, Box 536 San Juan  
VERMONT Burlington, Feb. 15-17 Sec. Dr. W. Scott Nay, Underhill

### Kentucky Reciprocity Report

Dr. A. T. McCormack, secretary, State Board of Health of Kentucky, reports 8 physicians licensed by reciprocity with other states and 2 physicians licensed by endorsement from Aug. 17 to Dec. 16, 1932. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Louisville School of Medicine		(1929)	Michigan
Ohio State University College of Medicine		(1917)	Ohio
University of Pennsylvania School of Medicine		(1927)	Minnesota
University of Tennessee College of Medicine	(1928),	(1931)	Tennessee
Vanderbilt University School of Medicine	(1929)	(1929)	Tennessee
Medical College of Virginia	(1906)	(1931)	Virginia

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Harvard University Medical School		(1929)	N. B. M. Ex.
Washington University School of Medicine		(1929)	N. B. M. Ex.

### Maine November Report

Dr. Adam P. Leighton Jr., secretary, Maine Board of De-

1 passed and 1 failed Two physicians were licensed by reciprocity with other states The following colleges were represented

College	PASSED	Year Grad	Per Cent
College of Medical Evangelists		(1932)	82
College	FAILED	Year Grad	Per Cent
Maryland Medical College		(1906)	71.4
College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Illinois College of Medicine		(1931)	California
St. Louis University School of Medicine		(1909)	Utah

## Book Notices

**Alcohol and Man The Effects of Alcohol on Man in Health and Disease** Editor Haven Emerson, MD De Lamar Institute of Public Health, Columbia University Associate editors Henry A. Christian MD Reid Hunt, MD Arthur Hunter LL.D. F.A.S. Charles C. Lieb MD Walter R. Miles, PhD and Ernest G. Stillman MD Cloth Price \$3.50 Pp 451 with illustrations New York Macmillan Company 1932

There have previously been published compilations of the available knowledge concerning alcohol and its effects on the human body. It is doubtful whether any thus far made available are as thorough as this book which Dr. Haven Emerson has edited, or more scientific. It is doubtful whether any of those who have written the various chapters can be accused of unscientific bias on one side or another of the problems discussed. The names are such as would commend respect in any scientific group. The various sections of the book concern the effects of alcohol on human functions, the effects of alcohol on the cell and on heredity, alcohol as a poison and as a medicine, alcohol and body resistance, the effects of alcohol on man's conduct and mentality, and the effects of alcohol on longevity. The conclusion may be derived that alcoholic beverages used in moderation never appreciably shortened any one's life. At the same time it must be remembered that the use of alcohol to excess is distinctly harmful and that there is a tendency toward alcoholic habit which may lead to it not only in those of mentally defective character or psychopathic but perhaps also in those not distinctly across the border so far as the mind is concerned. This volume makes available accurate information concerning the effects of alcohol on all the tissues of the body and describes its uses in the treatment of disease. It is significant that alcohol is not considered a good preventive of colds and therefore should not be taken when one is exposed to cold, but it may be comforting when coming in out of the cold. The therapeutic use of alcohol is considered by Harlow Brooks, who mentions its usefulness in old age. Dr. Joseph L. Miller points out its value in certain forms of infection. Dr. Henry A. Christian discusses its use as a stomachic and during convalescence. Dr. Lawrason Brown discusses the value of alcohol in tuberculosis. The summary says "As therapeutic agents alcoholic beverages have a place in rendering more comfortable and peaceful the disturbances of chronic disease and old age. Sometimes it is useful to increase appetite." This seems to constitute the established usefulness of alcoholic remedies.

**Your Hearing How to Preserve and Aid It** By Wendell Christopher Phillips MD Consulting Surgeon Manhattan Eye Ear and Throat Hospital New York City and Hugh Grint Rowell MD Assistant Professor of Health Education and Physician to the Horace Mann Schools Teachers College Columbia University Cloth Price \$2 Pp 232 with 12 illustrations New York & London D. Appleton & Company 1932

The Appleton series of books on health for the public is one of the best established and best chosen of such series. It gains greatly by the publication of the latest contribution on hearing, which is presented by a happy cooperation of an authority in the field with a health teacher. The book includes not only a good explanation of the mechanism of hearing and of the system used for evaluating hearing but also a good account of proper hygiene of the ears and a statement concerning lip reading, the social aspects of the subject and the use of hearing devices. This book is unquestionably the best yet made available for those who are hard of hearing or who wish to have definite information concerning the subject, and it may be recommended without any reservation.

**A Handbook of Experimental Pathology** By George Wagoner MD, Associate in Pathology and R. Philip Custer MD Associate in Research Pathology The School of Medicine University of Pennsylvania Cloth Price \$1 Pp 160 with 22 illustrations Springfield, Ill. Charles C. Thomas 1932

This handbook should be of value to all teachers and students of pathology who strive to correlate functional and structural aspects by the aid of experimental methods. The book will appeal especially to those who wish to observe structural changes in diseased tissues in the early stages, rather than in the end-stages ordinarily seen at the postmortem table. The authors have devised or assembled experiments designed "to demonstrate the more important problems in general and special pathology." Definite directions for each type of experiment are given and brief comments or questions are added to aid the student in observing and analyzing the results obtained. References to the original articles are also of service. The portion of the book describing surgical technique, the care and feeding of experimental animals, types of anesthesia, tables of normal blood values and chemical examination of the blood is excellent. The authors are to be commended for their efforts to make the experimental method as applicable to pathology as it has been to physiology. As Krumbhaar says in the foreword, "Perhaps it is not excessive, then, to congratulate the authors on this pioneer effort and to hope that it will have an important influence in furthering the acquisition of better concepts of pathology and of a dynamic knowledge of disease processes."

**The Extra Pharmacopœia of Martindale and Westcott** Revised by W. Harrison Martindale PhD PhCh FCS Vol I Twentieth edition Cloth Price 27s 6d Pp 1216 London H. K. Lewis & Company Ltd 1932

A publication still popular in its twentieth edition must be of value. A perusal of this volume reveals that the pages are replete with information. Much of it is valuable. A portion of it will not be received with enthusiasm in this country, and a portion will be criticized. The therapeutic index is especially referred to as meriting criticism. The inclusion of such an index is not a compliment to the training of the medical profession. As to the therapeutic index are abstracts of the results of clinical experiments. These follow the descriptions of the drugs used. The reference to the original paper is always given, which indicates that the authors are simply recording and not recommending. It must be remembered that the volume is British, many references to American literature, which includes the U. S. P. Pharmacopœia, are given. New and Nonofficial Remedies is listed under abbreviations but it is not referred to in the text.

**The Anatomy of the Human Orbit and Accessory Organs of Vision** By S. Ernest Whitnall MA MD BCh Professor of Anatomy McGill University Montreal Second edition Cloth Price \$6.25 Pp 467 with 212 illustrations New York & London Oxford University Press 1932

Although the fundamental facts of a subject of this nature always remain the same, the author has revised the text throughout and has made numerous additions, all of which have materially improved and justified the appearance of this edition. The subject has been treated thoroughly, completely and concisely. The text is well arranged and the subdivisions of the subject follow one another in a natural sequence. As is necessary in a work of this nature, the author has to good advantage made many references to the works of others and taken quotations from them. The subject matter is well illustrated with photographs of a large series of personal dissections and preparations. Although these illustrations in almost all instances are as perfect as photographs can be, this edition has been enhanced by the increased number of colored and diagrammatic plates. The statement that "the predominant muscles are in capital letters" in the legend to figure 154, which was adapted from Testut, is not borne out by the actual facts. In part IV the author briefly describes the cerebral connections of the orbital nerves. This part is appropriately titled "appendix," for the subject matter, as well as some of that in the latter portion of part III, is not in the realm of the anatomy of the human orbit. However, the brief description of the extra-orbital course and connections is a desirable feature of such a book for it permits of the proper conclusion of the description of the orbital nerves. The work is completed by a well chosen, carefully compiled and comprehensive



bibliography of the papers and books relating to the anatomy of the orbit which have been published since 1900. This volume, which should be in the library of every ophthalmologist and anatomist, is suitable as a reference work for rhinologists and neurologists. It is one of the best books, if not the best, on this subject in any language.

**The Hygiene of Marriage. A Detailed Consideration of Sex and Marriage.** By Willard S. Everett, Ph.D., Central Y. M. C. A. College, Chicago. Foreword by Clara M. Davis, M.D., Associate Physician, The Children's Memorial Hospital, Chicago. Introduction by T. V. Smith, Ph.D., Professor of Philosophy, University of Chicago. Physicians edition. Cloth. Price \$3. Pp. 262 with illustrations. New York: Vanguard Press, 1932.

This book is about equally divided between material discussing the anatomy and physiology, the hygiene, both physical and mental, of sex, and some instructions for proper sexual union as the first part, with material on birth control as the second part. The material on birth control is about as complete and accurate as has anywhere been made available. It includes not only an analysis of the laws on the subject but also a list of all the birth control clinics and a study of their work, an analysis of all the available methods of contraception with their virtues and disappointments, and a good index.

Apparently, administration of laws has been relaxed sufficiently to permit general distribution of books of this character, since there has been a veritable flood of them on the market in recent years. Like the laws regarding prohibition, these laws seem to have become obsolete through failure to enforce or perhaps through expression of the public wish in a rather definite manner.

**The Use of Iodol in Diagnosis and Treatment. A Clinical and Radiological Survey.** By J. A. Sicard and J. Forestier. Cloth. Price \$1. Pp. 237 with 50 illustrations. New York & London: Oxford University Press, 1932.

Iodized poppy seed oil has been used in diagnosis since 1921. An enormous literature has accumulated on the subject. The material, however, has been scattered in various journals. A book on the subject by the originators of the idea is therefore welcome. The book deals with the various phases of the subject, with chapters on chemical and physiologic studies, on the use of iodized poppy-seed oil in the spinal subarachnoid space, epidural space, bronchopulmonary cavities, the genitourinary system, the blood vessels, the nasal sinuses and the lacrimal ducts, and the estimation of the secretory activity of the stomach. There is also a chapter on therapy, in which the authors discuss epidural therapeutic iodized poppy-seed oil, various forms of algasia, arthritis, enuresis, suppurative bronchopulmonary cavities, cold abscesses and tuberculosis of the serous membranes. The book is a useful guide since the authors have done more work on the subject than any other investigators. One must however be careful not to be carried away by the enthusiasm of the authors. Few clinicians advise therapy with iodized poppy-seed oil. There is also a reaction against its use for diagnostic purposes in the spinal subarachnoid space. The authors point out how slowly the oil is eliminated from the subarachnoid space but they do not consider this fact a contraindication to its use. It has recently been found that because of its slow elimination it may become a source of irritation to the meninges. Its use should therefore be limited to a few selected cases. The book has been prepared by the junior author as Professor Sicard died before the English translation was published.

**Die Krise der Medizin. Lehrbuch der Konstitutionstherapie.** Band I. (Konstitutionstherapie). Band II. Medikamente und Rezepte. Von E. Lindner. Viertes, fünfte, sechste, siebte, achte, neunte, zehnte, elfte, zwölfte, dreizehnte, vierzehnte, fünfzehnte, sechzehnte, siebenzehnte, achtzehnte, neunzehnte, zwanzigste, einundzwanzigste, zweiundzwanzigste, dreiundzwanzigste, vierundzwanzigste, fünfundzwanzigste, sechsundzwanzigste, siebenundzwanzigste, achtundzwanzigste, neunundzwanzigste, dreißigste, einunddreißigste, zweiunddreißigste, dreiunddreißigste, vierunddreißigste, fünfunddreißigste, sechsunddreißigste, siebenunddreißigste, achtunddreißigste, neununddreißigste, vierzigste, einundvierzigste, zweiundvierzigste, dreiundvierzigste, vierundvierzigste, fünfundvierzigste, sechsundvierzigste, siebenundvierzigste, achtundvierzigste, neunundvierzigste, fünfzigste, einundfünfzigste, zweiundfünfzigste, dreiundfünfzigste, vierundfünfzigste, fünfundfünfzigste, sechsundfünfzigste, siebenundfünfzigste, achtundfünfzigste, neunundfünfzigste, sechzigste, einundsechzigste, zweiundsechzigste, dreiundsechzigste, vierundsechzigste, fünfundsechzigste, sechsundsechzigste, siebenundsechzigste, achtundsechzigste, neunundsechzigste, siebenzigste, einundsiebzigste, zweiundsiebzigste, dreiundsiebzigste, vierundsiebzigste, fünfundsiebzigste, sechsundsiebzigste, siebenundsiebzigste, achtundsiebzigste, neunundsiebzigste, achtzigste, einundachtzigste, zweiundachtzigste, dreiundachtzigste, vierundachtzigste, fünfundachtzigste, sechsundachtzigste, siebenundachtzigste, achtundachtzigste, neunundachtzigste, neunzigste, einundneunzigste, zweiundneunzigste, dreiundneunzigste, vierundneunzigste, fünfundneunzigste, sechsundneunzigste, siebenundneunzigste, achtundneunzigste, neunundneunzigste, hundertste. Stuttgart: Hippokrates Verlag, C. m. b. H., 1932.

In this the author appeals for a return to the medicine of the days of Paracelsus and Galen whose views prevailed up to about a hundred years ago. He maintains that the rejection of bloodletting, cupping, emetics and leeching to the full development of medicine constituted a great error. He regards such apparently local diseases as glaucoma, amenorrhea and the like as general metabolic disorders. Actually the trend of modern medicine is gradually preparing the field for a return to that view. He has struck on the weak point of modern medicine in its tendency to over-specialization. Whether he is justified however in condemning all modern medicine because of over-specialization is greatly to be doubted.

Still more to be doubted is his insistence on a return to ancient and medieval medicine in toto. In his two volumes he ably presents his views on the subject. In the first volume he discusses general therapeutics, such as bloodletting, catharsis and emetics, and their specific application in various diseases. In the second volume he has prepared a list of measures to be used in various syndromes. Some of these measures are medical prescriptions, some are folk medicines and some are the general measures, such as bloodletting, which have been discussed in the first volume. All in all, this work presents as sound an argument for the return to previous theories and therapy as one can find. There seems to be a nucleus of truth in Aschner's conception of disease, but few will care to accept his views on therapy.

**Antony van Leeuwenhoek and His 'Little Animals' Being Some Account of the Father of Protozoology and Bacteriology and His Multifarious Discoveries in These Disciplines.** Collected, Translated and Edited from His Printed Works, Unpublished Manuscripts and Contemporary Records. By Clifford Dobell, F.R.S., Protozoologist to the Medical Research Council, London. Published on the 300th anniversary of his birth. Cloth. Price \$7.50. Pp. 435 with 32 plates. New York: Harcourt, Brace & Company, 1932.

The publisher has treated this book *con amore*. It is one of the most attractive volumes thus far made available in the field of medical history. The book is large, is handsomely illustrated with engravings, and is written, moreover, with a distinctly human point of view. It contains numerous quotations from Leeuwenhoek's writings as well as those of other people of the time. The father of microscopy is no doubt one of the most important figures in medical and scientific history, but even were this not the fact the book would be interesting, because Leeuwenhoek was himself a most interesting person. In this book, through the letters and writings of Leeuwenhoek, one may sit by his side as he makes his investigations and derive all the pleasure that he himself no doubt had as he extended his observations. The book is completed by an excellent bibliography of Leeuwenhoek's articles, a bibliography of the subject and a good index.

**Die chronische Encephalitis epidemica in ihrer gutachtlichen und sozialen Bedeutung.** Von Dr. med. Rudolf Neustadt, Dozent für Psychiatrie und Neurologie an der Medizinischen Akademie Düsseldorf. Paper. Price 5.70 marks. Pp. 103 with 2 illustrations. Leipzig: Johann Ambrosius Barth, 1932.

This monograph deals exclusively with the social and medicolegal aspects of epidemic encephalitis and has been written for the benefit of those who are called on to give expert opinion or advice in the many troublesome situations in which the unfortunate victims of chronic encephalitis find themselves. It is written with reference to German social conditions and laws, but the same problems exist in all civilized countries. On account of the recognized advanced state of German social legislation, much no doubt can be learned from the handling of these problems in Germany. The criminal aspects, legal responsibility, schooling, institutional care, indications for abortion, relation to insurance, guardianship, and capacity to drive automobiles are all treated with usual German thoroughness.

**The Colon, Rectum and Anus.** By Fred W. Ranish, B.A., M.A., M.D., Associate Professor of Surgery, The Mayo Foundation, J. Arnold Bergen, B.S., M.D., M.S. in Medicine, Assistant Professor of Medicine, The Mayo Foundation, and Louis A. Bule, B.A., M.D., F.A.C.S., Associate Professor of Proctology, The Mayo Foundation. Cloth. Price \$9.50. Pp. 346 with 435 illustrations. Philadelphia & London: W. B. Saunders Company, 1932.

This book covers the diseases of the entire colon, rectum and anal regions in a clear and comprehensive manner, with an inclusive bibliography. The first three chapters are devoted to the anatomy, physiology and developmental abnormalities, with especial reference to their clinical manifestations. Volvulus, intussusception and diverticulosis are described briefly yet accurately. The chapters on chronic ulcerative colitis and parasitic diseases of the large intestine are especially noteworthy. The illustrations and roentgenograms are clear and instructive. The vaccine treatment is stressed, but other therapeutic measures do not receive adequate attention especially the beneficial results obtained by ileostomy and colectomy. Amebiasis is discussed from various points of view and the therapeutic agents are evaluated. The field of proctology is given a thorough and exhaustive consideration although the

absence of illustrations of proctoscopic observations is to be regretted. The general treatment of the conditions encountered by the proctologist and the internist is adequate. The neoplastic lesions, both benign and malignant, are given due attention. The more or less standard operative procedures are well described.

**Food and Character** By Louis Berman M.D. Cloth Price \$3.50 Pp 369 Boston Houghton Mifflin Company 1932

Some years ago the author of this volume published a book called "The Glands Regulating Personality." It was a largely imaginative work based on certain scientifically established facts. The present volume accumulates a great deal of material relative to foods culled from all sorts of available works and then endeavors to show that character can be modified by varying proteins and other ingredients of the diet. Perhaps the book was meant to be sensational, but it is so hard to read that it is likely to be neglected. This will be not so bad as there is much in the book that is unestablished. The author concludes that the hope of the world lies in the proper scientific feeding of children and the prevention and correction of ductless gland deficiencies. He even promises rejuvenation and superhealth, a promise which neither this author nor any one else can make good.

**Vitamin Content of Australian New Zealand and English Butters** By M. E. F. Crawford, E. O. A. Perry and S. S. Zilva. Medical Research Council Special Report Series No. 175. Paper Price 1s Pp 50 London His Majesty's Stationery Office 1932

This report on the vitamin content of Australian New Zealand and English butters is a part of the broad program of research into the vitamin content of foodstuffs, particularly fruits, vegetables and dairy products, and on the effect of different methods of cultivation, preparation and storage on the vitamin values. Information on butter is of importance, as it is a particularly good source of vitamins A and D in the general diet. The investigations indicate a high and uniform potency of Australian and New Zealand butters in vitamins A and D equivalent to that of butters produced in Great Britain or elsewhere in Europe. The methods of production and handling and the delays in transit have a negligible influence on the vitamin content of the butters as they reach the consumer. These butters are a valuable source of vitamins A and D for the British population especially during the winter season, when the vitamin potency of home or other European butters may be low. The racial origin of the cows providing the butter has no significant effect on the vitamin content. Butters from different parts of Australia are closely equivalent in value. The vitamins of butter have remarkable stability during cold storage. There is no appreciable loss of potency during transit by sea, in instances no notable loss could be detected even after storage for periods of two years. This stability was found whether the butter was stored in large or small quantities or whether prepared from sweet or acid cream. The neutralization of acid creams before churning as practiced in Australia and New Zealand has no destructive value on the content of vitamins A and D.

**New Types of Old Americans at Harvard and at Eastern Women's Colleges** By Gordon Townsend Bowles. Cloth Price \$2.50 Pp 144 with 20 illustrations Cambridge Mass Harvard University Press 1932

It has become apparent through studies made in various universities that the members of the present generation are on the average taller and weigh more than did their parents and grandparents who entered those same institutions in previous years. The author is convinced that the causes for increased stature in the student group are as follows:

- 1 Increased medical attention in preserving those children who have outgrown their strength until they have reached maturity and a normal state of resistance to disease
- 2 Cultural modernization and a general speeding up process
- 3 Better food, in more abundance and in great variety
- 4 More exercise
- 5 Possible assortive and selective mating on the part of parents
- 6 Occupational change of parents
- 7 The nonascertainable element of climatological and meteorological effect

**Acromegaly** By F. R. B. Atkinson M.D. C.M. With a foreword by Sir Arthur Keith. Cloth Price 21s Pp 260 with 3 illustrations. London John Bale Sons & Danielsson Ltd 1932

More than two thirds of this monograph is concerned with the reports of 1,359 cases collected from the literature. It is therefore an important document for any one who is interested in studying acromegaly but suffers from the defects of all such compilations, which are written without the critical judgment that comes from first-hand knowledge of the data on which they are based. For example, among the tumors of the hypophysis that may cause acromegaly, the author notes glioma, angioglioma, sarcoma, epithelioma, carcinoma and psammoma without bringing out clearly that all these diagnoses were made at a time when the pathology of the pituitary gland had not been worked out and that there is every reason to suppose that the disease is associated always with either an increase in the number of eosinophils or an adenoma composed primarily of eosinophils. Again, in discussing the treatment he mentions eight different methods that may be used for operation without bringing out clearly that all these methods have been abandoned with the exception of variations of the frontal or temporal intracranial approach. The effectiveness of roentgen treatment in these cases is also not emphasized but merely mentioned incidentally and the impression is given that surgical treatment is the only hope in these cases, whereas the effectiveness of roentgen therapy is greatly reducing the number of operations necessary in acromegaly. The book, therefore, although a useful compilation, cannot be recommended as a critical statement of present knowledge concerning acromegaly.

**Lying and Its Detection. A Study of Deception and Deception Tests** By John A. Larson Assistant State Criminologist State of Illinois. In collaboration with George W. Haney and Leonarde Keeler. With an introduction by August Vollmer. Cloth Price \$5 Pp 453, with 60 illustrations. Chicago University of Chicago Press, 1932

This book is of interest primarily to the criminologist, although it may of course have value for the psychiatrist as well. The lie detector is essentially a cardiopneumograph which indicates the changes in the heart rate, the respiration rate, the blood pressure and the response of the person under investigation to significant questions. The accuracy would seem to have been well demonstrated. In this book the author discusses the history of attempts to detect lying in the past, including torture, the third degree and the work of prosecuting attorneys before judges and juries. He then discusses word association tests, the scopolamine technic of Dr. House and similar scientific methods, and finally elucidates the use of the cardiopneumopsychograph as applied in various criminal cases. The book is completed with a good bibliography.

**Grundriss der Sportmedizin für Ärzte und Studierende** Von Professor Dr. H. Herxheimer Leiter der sportärztlichen Beratungsstelle an der II. Medizinischen Klinik der Charité Berlin. Boards Price 10.50 marks Pp 192 with 45 illustrations Leipzig Georg Thieme 1932

One of the greatest weaknesses of the present physician is his lack of knowledge of the physiology of exercise. And with the public turning more and more to sports of varying strenuousness as a means of occupying leisure time the family doctor must advise as to the selection and amount of exercise. The family doctor, furthermore, must show greater knowledge of athletic injuries and their immediate and distant implications. There are comparatively few men like Nichols, Richards and Stevens who know both the sport and its hazards and remedies. Herxheimer's excellent book deserves translation into English and is of interest not only to physicians in general but in particular to those whose interests involve health conservation. The first section of the book consists of 133 pages on the physiology of exercise. The author has made a careful study of the literature and provides an excellent bibliography of international research. Sections describe the circulatory apparatus and the respiratory system with briefer mention of such subjects as the nervous system, biochemistry and body temperature. There are excellent graphs. The illustrations include cardiac roentgenograms of marathon runners reminiscent of the studies of Dr. Arlie Bock and others in this field. The second section is on the effects of exercise on the organs and their functions. The sport types are revealed in text and photographs for example marathon runners, middle distance runners, sprinters, high jumper,

discus throwers, and heavy athletes of the Carnera and Sonnenberg modes. Local skeletal changes are studied through roentgenograms of boxers' elbows, football players' knees, and so on. There is a brief section, finally, on the influence of physical, chemical and emotional factors. There is an excellent index.

## Medicolegal

### Damages for Death of Infant from Prenatal Injuries

(*Magnolia Coca Cola Bottling Co. v. Jordan* (Texas) 47 S W (2d) 901)

A truck belonging to the defendant, the Magnolia Coca Cola Bottling Co., through the negligence of its agent, collided with an automobile driven by one of the plaintiffs, Mrs. Jordan. She, then eight months' pregnant, was crushed against the steering wheel and other parts of the car, bruising her abdomen and back. The collision occurred on Sunday and on the following Sunday morning she gave birth to twins, a boy and a girl. The boy, according to the mother's testimony, was bruised on the left hip and on the external genital organs, there was a scum over his eyes, he did not act right or seem like a baby. Both twins were weak. They did not "nourish", they could not or did not know how. Nineteen days after his birth, the boy died. Death was attributed to the injuries received at the time of the collision.

The plaintiffs, the father and mother of the twins, brought suit. The jury, on special issues, awarded \$5,000 for the damages suffered by the plaintiffs generally and \$1,250 for the damages resulting from the death of their minor son. The trial court entered judgment for the \$5,000 awarded by the jury. It refused, however, to enter judgment for the \$1,250 awarded on account of the death of the child, holding that "the law gives to parents no cause of action for the loss of services of a child which dies as a proximate result of injuries while it is still quick in the womb of its mother, even though such injuries be inflicted by the negligence of the defendant." The defendant appealed to the court of civil appeals of Texas, El Paso, from the judgment of \$5,000 and the plaintiffs, by cross assignment, complained of the trial court's refusal to enter judgment in their favor for the amount awarded by the jury for their pecuniary loss through the death of their son.

The Texas statutes concerning the recovery of damages for injuries resulting in death, said the court of civil appeals, limit recovery to those cases in which the injured person, if death had not ensued, would be entitled to maintain an action for the injuries suffered by him. The right of the parents to recover damages in this case depends, therefore, on whether or not the son if he had lived, could maintain an action for the injuries inflicted on him before his birth. In *Nelson v. Railway Co.*, 78 Texas 621, 14 S W 1021, the court was called on to say whether a posthumous child was entitled to recover damages for the death of its father, resulting from injuries inflicted by the alleged negligence of the appellee in that case. The mother and two other children had compromised their claim but later, after the posthumous child was born, the mother instituted a suit on his behalf, as his next friend. The Supreme Court concluded that it was the purpose of the legislature to give the right of action in such a case to all surviving children of the deceased and that the plaintiff, although unborn at the time of his father's death, was then in being and was one of his surviving children. The court of civil appeals could see no logical reason in the present case why an unborn child is considered to be lawfully in being for the purpose of collecting damages for the death of its father through negligence, an unborn child should not be considered lawfully in being also for the purpose of collecting damages to its own person. The court concluded, therefore, that the infant, one of the appellees' plaintiffs in the court below, in the present case, if its death had not ensued, could maintain an action against the appellant and that therefore the appellees' parents could maintain an action for the loss of the child's services. While there are decisions in several of the states holding that damages for prenatal injuries cannot be recovered at common law, yet said the court, the holding of the Supreme Court of Texas in *Nelson v. Railway Co.*

supra, shows a tendency toward liberality in the construction of the Texas statutes on the subject, rather than toward the restricted view taken in other states.

The judgment of the trial court was therefore reformed and judgment rendered in favor of the appellees for the sum awarded by the jury on account of the death of the infant son.

**Workmen's Compensation Acts Liability of Employer for Physician's Malpractice**—An employee was injured in an industrial accident. To diagnose the injury, a physician furnished by the employer made roentgenograms and in doing so burned the employee. The employee returned to work in about ten weeks and was awarded compensation for the time lost from work. Approximately a year later the employee ceased work altogether. The roentgen burns had apparently destroyed some blood vessels and burned certain areas of skin so badly that ulcers had developed. The employer denied liability for this injury, which he claimed was due entirely to the malpractice of the physician. Section 4884, Kentucky Statutes, said the Court of Appeals of Kentucky, charges the employer with the duty to provide competent surgical treatment and further provides that if the employee submits to a necessary operation he shall be entitled to compensation for the disability following the operation. Section 4885, *ibid*, provides that no action shall be brought against an employer to recover damages for malpractice to which an employee has been subjected by a physician or hospital. These provisions, continued the court, are not inconsistent. In effect, the employee is entitled to compensation for his disability following an operation, but he cannot sue his employer in an independent action at law, for damages for malpractice, the entire matter is to be settled in compensation proceedings before the compensation board. The disability of the employee here is the direct result of the roentgen treatment and is an actual disability following an operation. The employer, therefore, is liable in appropriate proceedings before the compensation board for the results of the malpractice of the physician furnished by him.—*Black Mountain Corporation v. Middleton* (Ky.), 49 S W, (2d) 318.

**Compensation of Physicians and Hospitals Right to Limit Liability After Express Promise to Pay**—The occupants of an automobile were injured in a collision with a motor bus owned by the defendant. The driver of the bus took them to a hospital owned by the plaintiff physician and directed that necessary treatment and hospitalization be rendered at the defendant's expense. Two days later an investigator for the defendant's insurer determined that the defendant was not legally liable for the injury caused by the collision. Apparently at the request of this investigator, the defendant wrote the plaintiff that he would not be responsible for payment for further services. The plaintiff, however, completed the necessary treatment and hospitalization and sued the defendant for the total amount due. Judgment was given in his favor, and the defendant appealed to the court of civil appeals of Texas, El Paso. The defendant assigned as error the refusal of the trial court to continue the trial in order to enable him to produce the insurance investigator as a witness. This refusal, the defendant contended, affected him adversely, because the investigator would have testified on behalf of the defendant, that two days after the accident he undertook to limit the contract between the plaintiff and the defendant so as to relieve the defendant from liability for future charges. But, said the court of civil appeals, without the plaintiff's assent the defendant could not limit the liability imposed by the original contract. As was said by the Supreme Court of Minnesota in *St. Barnabas Hospital v. Minneapolis*, 68 Minn 254, 70 N W 1126.

The plaintiff, having taken in a helpless and severely injured man at the defendant's request and upon its promise to pay for an indefinite time, it would be monstrous if the defendant could the very next day, summarily withdraw its promise, leave the sick man on plaintiff's hands and put it to the alternative of either keeping and caring for him without pay or else cruelly and inhumanly throwing him into the street.

Since the defendant could not limit his liability under the contract, the proposed testimony of the insurance investigator was irrelevant and the trial court committed no error in refusing to continue the trial. The judgment in favor of the plaintiff was affirmed.—*Page v. Thomas* (Texas), 47 S W (2d) 894.

## Society Proceedings

### COMING MEETINGS

American College of Physicians, Montreal February 6-10 Mr. E. R. Loveland, 133-135 South 36th Street, Philadelphia, Executive Secretary  
Annual Congress on Medical Education, Medical Licensure and Hospitals Chicago February 13-14 Dr. W. D. Cutter Council on Medical Education and Hospitals, 535 North Dearborn St., Chicago, Secretary  
Pacific Coast Surgical Association Del Monte Calif., February 23-25, Dr. Edgar L. Gilcreest 384 Post Street, San Francisco, Secretary  
Southeastern Surgical Congress, Atlanta, Ga., March 6-8 Dr. B. T. Beasley, 45 Edgewood Avenue, Atlanta, Secretary

### WESTERN SURGICAL ASSOCIATION

Forty Second Annual Meeting, held at Madison, Wis., Dec. 9-10, 1932

(Concluded from page 288)

#### Deferred Operation in Treatment of Periapendicular Abscess

DR. KARL A. MEYER, Chicago The present high mortality rate of acute appendicitis is due to the failure to remove the appendix before it perforates. The mortality in the neglected cases, complicated by periappendicular abscess, can be reduced by deferring operation in those cases in which the abscess can be determined to be resolving spontaneously, and draining only those abscesses that continue to spread under Ochsner management. In four cases the periappendicular mass was demonstrable only after the abdomen was opened or the patient was relaxed under an anesthetic. Drainage of the abscess was deferred in all four cases with the spontaneous resolution of the inflammatory mass in three cases and the subsequent drainage of an extending abscess in the remaining case. The treatment of the individual case based on the conditions found will give better results and fewer deaths than routine drainage in all cases of periappendicular abscesses.

#### Surgical Management of Acute Appendicitis with Perforation

DRS. L. G. BOWERS and A. TALBERT BOWERS, Dayton, Ohio This communication is based on a study of 243 consecutive cases of acute appendicitis with perforation, 219 were private patients, while 24 were patients who were admitted to the public service at the Miami Valley Hospital. The mortality rate for the private patients was 71 per cent, in 80 per cent of the cases the appendix was removed at the first operation, in the remaining 20 per cent of cases, drainage was instituted without any attempt to remove the appendix. In approximately 5 per cent of cases in which appendectomy was not done at the time of the primary operation, the appendix was removed from ten days (in two instances) to three months following the original operation, there were no deaths in this group of cases. The mortality rate for the public patients was much higher than that for the private patients, of the twenty-four operative cases of appendicitis with perforation, death occurred in eight instances a mortality rate of 33.3 per cent. A comparison of the histories of the private patients with those who were received in the charity service revealed that the average interval between the onset of symptoms and the time of operation was much greater for the public patients. Furthermore, practically every one of the public patients had taken a drastic cathartic soon after the first occurrence of abdominal pain. It is inevitable that postoperative complications will result in many cases of acute appendicitis with perforation. The early recognition and adequate management of these complications will greatly improve the prospects of a favorable outcome. Appendectomy for acute appendicitis is always a major surgical undertaking. This is particularly true in cases of acute appendicitis with perforation. The complications disclosed during the course of the operation demand prompt decision as to the type of surgical treatment that will most probably produce a favorable outcome. There is no operation in the whole field of general surgery in which surgical judgment and skill are of such paramount importance. Appendectomy for gangrenous appendicitis is never a minor operation. The interests of the patient demand that the surgeon get in early and get out quickly. The advancing death rate from acute appendicitis in this country will not be checked until the full force of these truths becomes generally appreciated.

#### Hemorrhage After Operations on the Biliary Tract

DR. W. T. COUGHLIN, St. Louis Every one agrees that, in hemorrhage from artery or vein the proper thing to do is to find the bleeding point and either tie it or control its supply in continuity. In my opinion, this should be done in any case except the capillary oozing. It is much better to look and see than to wait and see. For the jaundiced patient with capillary oozing, no treatment has done much good. I should remove a bleeding gallbladder on first making the diagnosis. I have tried all remedies from calcium chloride to coagulose. Whole blood transfusion for the first few administrations seems to check the oozing, but only temporarily.

#### Surgical Treatment of Arterial Embolism

DR. ARTHUR ZIEROLD, Minneapolis I am reporting a series of twenty cases of arterial embolism, all but two from the wards of the Minneapolis General Hospital. While the number of cases is yet too small to serve as the basis of any very critical analysis, nevertheless some general conclusions may be drawn. The material here presented consists of eleven surgical cases and eight which were considered nonsurgical. In one case, which remains unclassified, the femoral vein was ligated and the artery was not opened. Although the procedure terminated successfully, it is not included in the operative group. The cases were distributed equally between males and females. The age of incidence is that at which a break in cardiac compensation most frequently occurs, namely, between the sixth and seventh decade, the corrected average for age being 65 years. Of the total number of cases, fifteen presented definite histories of previous cardiac disorders. There are four cases without previous or existing heart disease in which arterial emboli developed in the presence of generalized infection. The one remaining case to be accounted for developed spontaneously in the absence of any other demonstrable disease process. In this series of operative cases, the lapse of time between the initial symptom and operation varied from one and one-half hours to seventy-two hours, in all but three the time being twelve hours or more. While it was possible to restore the circulation and by this I mean not only pulsation in the immediate neighborhood of the arteriotomy but also warmth and color to the extremities in eight of the cases unfortunately only three survived to be discharged from the hospital. This rather gloomy outlook is somewhat lightened by observation of the patients on whom operation was not performed. Of these, seven, or 87.5 per cent, died within a period of one to fourteen days following the initial symptoms of embolism. It is of interest to note that the length of survival in the two groups is much the same, which would give some basis for the statement that the surgical procedure in itself is not properly responsible for the mortality in this form of treatment. As the end-result of the two series show an 87.5 per cent mortality in the cases in which operation was not performed, and a 72.7 per cent mortality in the cases in which operation was performed, with a corresponding 72 per cent of immediate restoration of circulation, it would appear that embolectomy is a proper and reasonable undertaking.

#### Fatal Hemolytic Crisis One Year Following Splenectomy

DR. CLARENCE G. TOLAND, Los Angeles A woman, aged 48, had the characteristic leukopenia of splenic anemia when she came under observation, with evidence of depressed bone marrow function. Following splenectomy, the white cells immediately rose to 21,000, with an increase in the percentage of lymphocytes to 50. The bone marrow became more active and the red blood cells and hemoglobin rose. One year later she was no longer anemic but there was an apparent decrease in the platelets and the lymphocytes were still high. Then a cataclysmic destruction of blood occurred, overnight the red blood cells dropped to one fifth of normal and the white blood cells rose sharply to 47,000. The patient died of acute anemia unrelieved by blood transfusion. A close fundamental relationship between the original condition of splenic anemia and the later complicating condition of an atypical leukemia would certainly be suggested by this case. The paucity of cases of leukemia developing in patients with splenic anemia tends to discredit such a suspicion. Griffin of the Mayo Clinic in a personal communication says he has seen but three cases of

leukemia develop in such patients, and only one following splenectomy, not one of the three was of an acute hemorrhagic type. Necropsy failed to show any reason for the sudden hemolytic crisis. The liver showed groups of small round cells but there was no enlargement of the lymph nodes. The bone marrow was hyperplastic and microscopically showed active blood formation. The tubular epithelium of the kidneys was swollen and granular, and the collecting tubules contained brownish granular amorphous material with an occasional formed red blood cell. No history was obtained of anything that might have precipitated the crisis. She had been working a little harder than usual for two days preceding the attack but had not been exposed to cold, which sometimes precipitates paroxysmal hemoglobinuria, nor had she been given anything intravenously.

#### Intraperitoneal Rupture of Urinary Bladder in Fracture of Pelvis

DR JAMES P. HENDERSON, Kansas City, Mo. In all fractures of the pelvis one should always suspect a vesical rupture and as soon as the patient has overcome the initial shock, or immediately if his condition warrants, the definite diagnosis should be attempted and all preparations for operation completed. In many cases a diagnosis cannot accurately be made, but, as Alexander has wisely said, if rupture is strongly suspected an abdominal section should be performed. The only excuse for delay is when all signs and symptoms and tests would still leave great doubt as to the existence of such an injury. It makes no difference whether intraperitoneal, extraperitoneal or subperitoneal, immediate operation is required. All these tests are at times valuable but are not always positive and at times may even be very dangerous. The catheter will sometimes return clear fluid instead of tinged urine. A railroad man, aged 32, married, was hit by a freight car over the right side of the pelvis. A sharp pain was immediately felt over the lower part of the abdomen, followed by slight shock, and he was sent to the hospital. The next day there was a slight amount of blood in the urine and slight tenderness and discomfort over the hypogastric region. There was only a slight desire to urinate, and catheterization returned only 3 ounces of fluid. Cystoscopic examination revealed a high tear, which on operation was found to be half an inch in extent. The tear was closed and the bladder drained through the urethra with fixation of the pelvis. The patient made an uneventful recovery. This was a case of simple fracture and high tear with slight symptoms. A farmer, aged 42, married, was run over by a team of horses and wagon the latter going over the pelvis. On admission to the hospital he was under great shock, he had a fracture of the ascending ramus and a wide separation of the symphysis. The shock was treated for a day and the bladder was drained through the urethra. There was a large amount of bloody urine and a very rigid abdomen, which began to increase in size. The patient died the next day. A tear in the bladder  $2\frac{1}{2}$  inches long, a fracture of the pelvis and a 3 inch separation of the pubis symphysis were found. This was a multiple fracture and low tear.

#### Removal of Diseased Cartilage in Monarthrits Without Synovectomy Report of Twelve Cases

DRS. PAUL B. MAGNUSON and O. H. HORRALL, Chicago. This is a report of twelve cases of monarthrits, all of which gave a history of trauma. Two gave histories of generalized joint infection which had subsided, one joint having been traumatized subsequent to recovery from the general infection. Three patients had a torn semilunar cartilage acting as a foreign body and the remainder of the series gave histories of severe or oft repeated trauma. All the patients were operated on before April 1930, two and a half years having elapsed since the date of the last operation reported. No synovectomy was performed. Degenerated cartilage, exostoses, pannus and hypertrophied edges of synovial membrane were removed, including many islands of granular tissue on the joint surface. The joints were opened widely so that every surface might be inspected. In the three hip cases the head of the femur was displaced anteriorly so that the head of the acetabulum could be freely inspected. In the knee a transverse incision through the patella was the method of approach. After treatment consisted of exercises with weight varying from 5 to 10 pounds. The patients were able to walk as soon as the wound had

healed. This was done by means of a sling under the knee, attached to a rope on a frame above the bed, in such a way that the patient could lift the leg by pulling the rope. All the patients in this series have made functional recoveries, are free from pain, and have had no return of other symptoms.

#### Study of Series of Gallbladder Cases

DR EDMUND ANDREWS, Chicago. A study was made of sixty-one cases of gallbladder disease, including serial sections of the gallbladder, quantitative and qualitative bacteriologic studies of the gallbladder and gallbladder wall, and chemical studies of the bile. Certain deductions may be drawn from these data which correspond with previous experimental work. Infection seems to reach the gallbladder from the outside and not from the bile. The organisms found were the general flora of the liver and were generally in small numbers. The gallbladder wall contains many more bacteria than the bile, which is often sterile when the wall is infected. Chronic cases of closed gallbladder tend to be sterile, and acutely obstructed gallbladders are more frequently infected. The colon bacillus was the only organism found in large numbers and it seemed to account for all the deaths and most of the postoperative complications. Sections of the gallbladder wall indicate that the greatest degree of infection was present in the outer layers. The closed gallbladder absorbs bile salts very rapidly, thus bringing about crystallization of the cholesterol. The closed gallbladder absorbs cholesterol very slowly. There is no secretion of cholesterol in the gallbladder, as in all cases the total cholesterol in the gallbladder is less in disease than in health. The sediment of the bile contains a minimum of stone-forming substances. The cholesterol and calcium seem to be deposited on nuclei or stones and are not found in large amounts in the sediment. This fact militates against any ideas that stones are formed by agglomeration of sediment. Calcium is absorbed from the acutely infected gallbladder but is secreted in considerable amounts over long periods from the sterile closed gallbladder. This accounts for the calcium deposition on cholesterol stone and the calcium carbonate stone.

#### Presidential Address Congenital Clefts of the Face and Jaw, Operative Technic

DR HARRY P. RITCHIE, St. Paul. In 350 cases of harelip and cleft palate, the total number of operations was 567, that is, some procedure or combination of procedures which required an anesthetic. The mortality was five cases, or 1.4 per cent of the total number. The causes of death were pneumonia two, erysipelas, one, suffocation, one, undetermined, one. I believe that this is a very fair report on deaths, when all the factors and the class of patients is considered. I believe it due in part, first, to the fact that each case is checked by a pediatrician before operation, and, secondly, to the fact that bleeding from one operative step is controlled before another is undertaken. The plan of the classification of Davis and Ritchie is followed in checking the operative results. Therefore the lip, process, hard palate and soft palate are considered separately in the effort to determine the more frequent points of failure and again of success. The lip cases numbered 296, or 84.5 per cent of the total. Failure or unsatisfactory results occurred in forty-seven cases, or about 16 per cent. The operations done include practically all the procedures in the literature, but most of them were repaired on a principle suggested several years ago and called 'a muscle theory repair of the lip.' The incidence of the process cleft was 258 cases, or 73 per cent. Wiring was done in seventy-one cases, or 27.5 per cent of the 258 cases. My experience with the wires has varied, ranging from beautiful closures to those in which the bones were moved out of position with apparently irreparable damage. The uncertainty of the effect of the wires in a given case has led me to consider every method that will exclude their use. The incidence of the hard palate cases was 272 or 78 per cent of the total number. In all, these operations numbered 199 of the 272. This disparity in totals is explained in part by the fact that more recently the hard and soft palate operations are being postponed to a later date and seasonal selection or time of operation is being more carefully considered. The primary failures were sixty-five cases, or 32.7 per cent of the number of cases in which operation was performed. There is no suture line in the body in which the expectation of a primary union is so poor as in the hard palate.



Of the secondary repairs, however, forty-four were successful, with seven secondary failures. The principle of operation has been the Langenbeck-Warren sliding flap, with medial suture. My experience is valid support to all those who criticize the Langenbeck-Warren operation and who substitute other procedures. In spite of this, I believe that the Langenbeck-Warren principle is correct for three reasons. From the study of the embryology it meets the requirements of a normal palate, when union takes place, the result is a normal palate, there is a high percentage of success in all secondary repairs. The incidence of soft palate cases was 278, or 79.4 per cent of the total number of cases. In the survey there were only six cases in which the cleft was limited to the soft palate entirely. The total number of operations done was 207. The number of failures was seven, or 3.6 per cent. When one considers the factors inimical to a primary result, it would seem that 97 per cent of success indicates that the principles and procedures for the repair of this cleft approaches solution. The survey indicates that the most satisfactory part of the operative work is on the soft palate and in the body of the lip. The most uncertain part for primary and satisfactory results is in the hard palate and in the nostril of the unilateral lip case, but with attention to details there seems to be some hope for the future. The most debatable step is the use of direct force through the medium of wires for the closure of the alveolar process cleft. The report is made with belief that there still are many problems that await the touch of a master hand.

#### The Treatment of Pulmonary Abscess

DR CARL A. HEDBLOM, Chicago. The incidence of pulmonary abscess seems to have risen steadily during the last three decades. In 1900 there were perhaps 300 reported cases, in 1931 there were upward of 3,000. This is doubtless in part due to improved diagnostic methods, but there can be no doubt that there has been an increased incidence of postoperative abscesses. In a series of 2,458 from the world's literature, 657 (26.7 per cent) followed operation. In this country this group constitutes from one third to two thirds of the total number. A consideration of etiology lies beyond the limits set for this paper. However, it may be in order to state that accumulating evidence points to aspiration of virulent organisms from infected tonsils, pyorrhea alveolaris and infected sinuses, with associated temporary partial bronchial plugging as the most common cause. The obvious preventive measures are preoperative oral hygiene, avoidance of operation in the presence of acute infection of the upper respiratory tract, prevention of aspiration by light anesthesia—local or general—gravity drainage into the mouth during tonsillectomy under general anesthesia, suction, and so on. The smaller proportion of embolic abscesses may be prevented in part, perhaps by strict asepsis, by avoidance of operative trauma and by clean-cut ligation of vessels. Among the methods of treatment now recommended may be mentioned prolonged bed rest, thirst cure, postural drainage, vaccines, drug therapy, bronchoscopy, pulmonary collapse, thoracotomy drainage, cauterization and lobectomy. The evil lies not in the multiplicity of methods of treatment as such but in the tendency to indiscriminate, injudicious and persistent use of one favorite method in all types of cases. Pulmonary abscess varies extraordinarily as to infection, resistance, pathologic anatomy, size, position and contents of a cavity, the size of the communicating stoma and the inflammatory changes in its walls, in the bronchus and surrounding lung. Treatment, to be rational, must take these factors into account. The fundamental principle of treatment is adequate drainage—through a bronchus or through the chest wall. Bronchial drainage results in a spontaneous cure in perhaps 10 to 15 per cent of the acute mild cases. It may be much facilitated by posture. Bronchoscopic enlargement of the stoma between the cavity and the bronchus may make postural drainage more effective. Bronchoscopy is invaluable in the early removal of an etiologic foreign body. Bronchoscopic suction and lavage may further facilitate drainage but it has been pointed out that the percentage of cures from it is no higher than from simple postural drainage. Drainage through the bronchus of central abscess may be facilitated by collapse procedures such as pneumothorax, phrenic neurectomy or thoracoplasty, but the drainage tract of peripheral

cavities may be distorted and obstructed by such procedures. Pneumothorax collapse, furthermore, may result in rupture or spontaneous perforation of the abscess into the free pleural cavity. The mortality from the empyema that follows is very high. External drainage of the abscess may become urgent, and this cannot be safely accomplished until the lung has become adherent after reexpansion, and during that time the patient may have succumbed. Phrenic neurectomy, in my opinion, has a very limited field of usefulness, being indicated chiefly to control hemorrhage and perhaps for collapse of basal cavities that have good bronchial drainage. Extensive thoracoplasty has no indication as a primary drainage treatment of solitary abscess. The consensus seems to be that thoracotomy drainage should be instituted if bronchial drainage promoted by posture and by bronchoscopy fails after two or three months' trial. A more reasonable rule is to establish such a time limit for cases that are more or less stationary but to operate without delay as soon as an abscess cavity has formed in case of very ill patients and those who are getting progressively worse, particularly if the abscess is of the gangrenous type characterized by incessant cough with foul sputum, septic temperature, profuse sweating and prostration. For such patients, thoracotomy drainage is practically the only hope.

The generally accepted time limit for unsuccessful nonoperative treatment of acute abscess is from two to three months. But a large proportion of the abscesses when first seen by the surgeon have been present for many months or years. Such chronicity means extension of the cavity, thickening of its walls, often secondary bronchiectasis, large bronchial fistulas, myocardial damage, nephritis, arthritis, anemia and general debility. Adequate thoracotomy is then more difficult, the hazard of air embolus, metastatic abscess, septic pneumonia and hemorrhage is increased, convalescence is prolonged and secondary plastic operations are often necessary to collapse the stiff walled cavities, bronchiectatic dilatations and fistulas. The mortality is increased not from the operation but from the delay in performing it. The first step in thoracotomy drainage is accurate localization of the cavity, and for this the physical examination and the roentgenogram usually suffice. The second is safeguarding against infection of the pleural cavity by drainage only through adhesions. The presence or absence of such adhesions is determined by exploratory intercostal extrapleural thoracotomy. Thoracotomy drainage should be done only through pleural adhesions, and complete drainage should be accomplished by gradual stages if the patient's condition is such that a one or two stage operation involves any considerable risk to the patient's life.

#### Transurethral Prostatectomy by Means of the Resectoscope

DR HERMAN L. KRETSCHMER, Chicago. During the past eighteen months a great deal of interest has been manifested in the nonoperative treatment of various types of prostatic obstruction by means of transurethral resection. The following advantages of this new method over prostatectomy may be mentioned. A shorter period of hospitalization—in a series of 102 consecutive, unselected cases, the average stay in the hospital was nine days. In some of the cases the patients were discharged on the second and third day. This form of treatment can be used in a group of cases that were denied operative treatment, i. e., prostatectomy, because of various contraindications such as angina, coronary occlusion, and broken compensation. Patients will undoubtedly seek relief at a much earlier date than they now do. Its great value in cases of carcinoma of the prostate cannot be questioned. Among the objections that are mentioned are the possibility of recurrence and also the fact that strictures, it is claimed, may follow transurethral resection. These two questions will be answered with the passing of time. The postoperative course in comparison with prostatectomies is very much shorter and the course is a much milder one. Temperature reactions are fewer and the temperature does not rise so high, as a rule, and when present is of shorter duration. Great care must be exercised in selecting cases for this form of treatment, and the same preoperative study and preparation of the patient is necessary just as it is in cases for surgery. There were ten cases of carcinoma. The mortality in this series of cases was 3.4 per cent. I believe that the idea that this is a simple office procedure should be discouraged.



## Current Medical Literature

## AMERICAN

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Titles marked with an asterisk (\*) are abstracted below.

## American Journal of Anatomy, Philadelphia

51 269 508 (Nov 15) 1932

- Development of Pharyngeal Tonsil (Cat) Cell Types B F Kingsbury Jthaca N Y —p 269  
Evolution of Pelvic Floor of Primates H O Elftman New York —p 307  
Structural Changes When Growth Is Suppressed by Undernourishment in Albino Rat C M Jackson Minneapolis —p 347  
Spontaneous Amputation of Human Supernumerary Digits Pedunculated Postminum H Cummins —p 381  
Innervation of Larynx I Innervation of Laryngeal Muscles F Jemere —p 417  
Human Congenital Auricular and Juxta Auricular Fossae Sinuses and Scars (Including So-Called Aural and Auricular Fistulae) and Bearing of Their Anatomy on Theories of Their Genesis E D Congdon S Rowhanavongse and P Varamisara Bangkok Siam —p 439  
Development of Human Ovary from Birth to Sexual Maturity C S Smkms —p 465

## American Journal of Medical Sciences, Philadelphia

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- Social Incidence of Rheumatic Heart Disease Statistical Study in Yale University Students J R Paul and P A. Ledy New Haven Conn —p 597  
\*Immediate Causes of Death in Cancer S Warren Boston —p 610  
Oxygen Therapy Critical Review W H Potts Jr Dallas Texas —p 616  
Lysozyme in Saliva N Kopeloff M M Harris and Barbara McGinn New York —p 632  
Study of Iron Volume Index of Blood and Its Significance in Treatment of Anemia C Reich and Vera C Tiedemann New York —p 637  
\*Clinical Value of Uncorrected Color Index and of Cell Size in Pernicious Anemia S M Goldhamer with technical assistance of A Fritzell E Davidson and C Steen Ann Arbor Mich —p 645  
Studies of Anemia in Pregnancy I Gastric Secretion in Pregnancy and Puerperium M B Strauss and W B Castle Boston —p 655  
II Relationship of Dietary Deficiency and Gastric Secretion to Blood Formation During Pregnancy M B Strauss and W B Castle Boston —p 663  
Occurrence of Sickle-cell in White Race S Rosenfeld and J B Pincus Brooklyn —p 674  
Basal Metabolism in Pernicious Anemia and Subacute Combined Degeneration of Spinal Cord M M Suzman Boston —p 682  
Differentiation of Lymphatic Leukemia from Agranulocytic Angina H A Rothrock Jr Bethlehem Pa —p 689  
Diseases of Lymphoid and Myeloid Tissues V Coexistence of Tuberculois Hodgkin's Disease and Other Forms of Malignant Lymphoma I Parker Jr H Jackson Jr I M Bether and F Ott Boston —p 691  
\*Valuable Sign in Differential Diagnosis of Acute Abdominal Malaria K P A Taylor Havana Cuba —p 699  
Pathogenesis of Myocardial Fibrosis (Chronic Fibrous Myocarditis) Melusine R Brown Boston —p 707  
\*Gallbladder Infection and Arthritis L F Hartung and O Stembrocker New York —p 711  
Carburene Therapy in Ameliosis A David H Johnstone and L L Stanley San Francisco —p 716

**Causes of Death in Cancer**—Warren studied the immediate cause of death in 500 cases of carcinoma. He found that cachexia is the most frequent single cause although it is exceeded by the total of the various pulmonary disorders. Cachexia is associated most frequently with cancer of the breast, stomach and large intestine. The commonest cause of death in carcinoma of the cervix uteri is renal insufficiency. Septic is an important factor in fatal cases. The striking association of carcinoma of the buccal mucosa with pneumonia (12 per cent) and with lung abscess (20.3 per cent) emphasizes the importance of pneumonia in the production of the latter.

**Color Index and Cell Size in Pernicious Anemia**—Goldhamer states that the corrected color index represents the relative size of red blood cells (100 per cent as normal) over the percentage of red blood cells (5000) of cells

equivalent to 100 per cent), disregarding such factors as sex and the various hemoglobin standards. Because of the wide range of normal red blood cell counts, 5,000,000 cells per cubic millimeter may be used as an average arbitrary standard. From 14 to 16 Gm of hemoglobin per hundred cubic centimeters of blood is suggested as a standard of normal. The average and serial color indexes in uncomplicated cases of pernicious anemia are above 1 before treatment, those of the male series are higher than those of the female. Regardless of the type of effective treatment, the influence on the color index is the same, the average and serial color indexes remain above 1 for about six weeks after treatment is started and then become less than 1. In untreated and uncomplicated cases, the lower the initial red blood cell count the higher the average color index. As the red cell count approaches the arbitrary normal following adequate treatment, the color index tends to approximate unity. Within the range of from 4,000,000 to 5,000,000 red blood cells per cubic millimeter, a level is reached at which the color index becomes 1 or less. A single color index determination is not always diagnostic in cases of pernicious anemia, as individual readings may be above or below 1, but during relapse the average color index is always above 1 unless some complication is present. The color index may be influenced by such complications as hemorrhage, chronic infections, glandular dystrophies and food deficiencies. The increase in the percentage of red blood cells larger than 7.5 microns in early relapse, regardless of the severity of the anemia, may be used as a factor differentiating pernicious anemia from secondary anemia. In untreated cases of pernicious anemia a high color index is always associated with a marked increase in the percentage of cells larger than 7.5 microns. The presence of increased numbers of large cells in a blood film, regardless of the red blood cell count, is one of the earliest and most constant observations of the blood in a beginning relapse of pernicious anemia.

**Sickle-cell in White Race**—Rosenfeld and Pincus state that a review of the literature of sickle cell anemia in the white race reveals only one previous case in which no evidence of a possible admixture of Negro blood can be discovered. A second case is cited in which the data are incomplete for such a conclusion. The authors report a third case in a family in which three generations show the sickling trait and at least five generations are known to be of the white race from a region where Negroes are practically unknown. The ethnologic and clinical features of the subject are discussed by the authors. They conclude that in the future more cases of sickle cell anemia in white persons will be discovered. The reasons for this statement are as follows. First since attention has been called to the occurrence of the sickling trait in the white race more frequent examinations of the blood for sickle cells will be made especially in those patients presenting the syndrome of an atypical hemolytic icterus. Thus more cases of the type described by the authors may be discovered. Second, since it is known that the sickling trait is a dominant character in its hereditary transmission and since interbreeding between the Negro and the white races is more or less constantly taking place in many regions including this country one may in the future generations expect the presence of this peculiar blood trait in an increasing number of apparently white descendants. Because of the tendency to deny such descent no history will be obtained of such racial origin in affected individuals, thereby increasing the number of apparently pure white cases of sickle cell anemia.

**Basal Metabolism in Pernicious Anemia**—The basal metabolic rates of sixty-five cases of pernicious anemia without and sixty-five cases with subacute combined degeneration of the spinal cord have been studied by Suzman. In pernicious anemia without spinal cord degeneration the basal metabolism tends to be either normal or elevated (41.5 per cent of the cases presented a basal metabolic rate of over plus 10 per cent) but in pernicious anemia with subacute combined degeneration there is a distinct tendency for diminution to occur (43.1 per cent presented a basal metabolic rate below minus 9 per cent). The basal metabolism is influenced by the level of the red blood cell. In the cases showing subacute combined degeneration the red blood cell counts were on the whole higher than in the group of patients with uncomplicated pernicious anemia. The data show, however, that the tendency for dimi-

nution of the basal metabolic rate to occur in patients with subacute combined degeneration of the cord exists at all levels of the red blood cells. Therefore the red blood cell level cannot be regarded as the responsible factor. Consideration is given to the possibility that the diminished basal metabolism, in cases presenting subacute combined degeneration, may be the result of neuromuscular disability. The symptomatology and the effects of thyroid administration in the cases showing low basal metabolism are described. Such symptoms as dry skin, absence of perspiration, intolerance to cold and a poor memory were commonly noted.

**Diagnosis of Acute Abdominal Malaria**—During five years' hospital surgical practice in the Caribbean littoral (Colombia, Panama and Guatemala), Taylor has kept records of all cases of malaria or suspected malaria in which vomiting or other acute abdominal symptoms were prominent. In examining his records, he found that they total only twenty-five cases, compiled in regions where the malaria morbidity is enormous and the malaria death rate probably as high as that in any part of the world. Of these cases, sixteen yielded positive smears for malaria parasites in the peripheral blood, six gave negative smears but have been classified as cases of malaria because of response to quinine and other indications, and three were diagnosed as malaria on admission but proved to be acute surgical cases. In addition to these three, of the sixteen patients with positive smears, one had an acute surgical lesion. The author states that the great majority of sufferers from tropical malaria with acute abdominal symptoms in his study were infected with estivo-autumnal parasites (93 per cent). Of this number 85 per cent gave positive tests for occult blood in the vomitus or gastric contents. The finding of occult blood was of considerable value in establishing the diagnosis of abdominal malaria. The distinction of acute abdominal malaria from acute surgical lesions of the abdomen rests principally on physical signs, of which the most important is absence of rigidity in malaria.

### American Journal of Ophthalmology, St. Louis

15 1007 1116 (Nov.) 1932

- Roentgen Ray Diagnosis of Double Perforation of Eyeball After Injection of Air into Space of Tenon. E. W. Spackman, Philadelphia —p. 1007
- Hyperphoria and Prolonged Occlusion Test. C. Beisbarth, St. Louis —p. 1013
- Ocular Papillomas. W. B. Doherty, New York —p. 1016
- Intra Ocular Foreign Body with Bacillus Welchii Infection. E. M. Berry, Brooklyn —p. 1022
- Visual Fields, Blind Spots, and Optic Disks in Endocrine Diseases. L. L. Myer and H. R. Rony, Chicago —p. 1024
- Contact Glasses in Keratoconus and in Anisotropia. Cases. Olga Sitchevska, New York —p. 1028
- Effect of Roentgen Ray and Radium Radiations on Crystalline Lens. C. A. Clapp, Baltimore —p. 1039
- Frequency of Various Kinds of Refractive Errors. I. S. Tassman, Philadelphia —p. 1044

### American Review of Tuberculosis, New York

26 323 461 (Oct.) 1932

- \*Surgery of Tuberculosis of Pylorus. Review of Literature. Report of Case. Experimental Data. F. C. Lee —p. 323
- Virulence of Attenuated Strain of Tubercle Bacillus R1 After Serial Passage Through Previously Tuberculin Negative Guinea Pigs. D. E. Cummings —p. 369
- Generalized Tuberculosis in Guinea Pigs Infected with Attenuated Strain of Tubercle Bacillus R1. D. E. Cummings and G. R. Dowd —p. 379
- Naturally Acquired Tuberculous Infection Among Saranic Laboratory Guinea Pigs. D. E. Cummings —p. 388
- \*Roentgenologic Appearance of Pulmonary Atelectasis and Simulating Conditions. J. L. Dubrow, Jersey City, N. J. —p. 408
- Frequency of Bacillemia in Tuberculosis. Lita Shapiro —p. 418
- Therapeutic Pleural Effusions by Oleothorax. B. T. McMahon, Loomis, N. Y. —p. 424
- Surgical Block of Superior Laryngeal Nerve in Tuberculous Laryngitis. F. Rime, Milwaukee and A. L. Banyai, Wauwatosa, Wis. —p. 427
- Calcified Pulmonary Miliary Tuberculosis. B. P. Stiebelman, New York —p. 437
- \*Massive Atelectasis Complicating Pulmonary Tuberculosis. Two Case Reports. L. I. Sokol, Duarte, Calif. —p. 442

**Surgery of Tuberculosis of Pylorus**—Lee presents twenty-six cases (other than those reviewed by Lusena) of tuberculosis of the pylorus abstracted from the literature and adds a personally observed case. From a study of these cases the author concludes that the condition is most common in persons between the ages of 20 and 40 years and affects males more than females. Pathologically the condition is primarily

in the submucosa, with extension to the mucosa and the formation of ulcers. The process may be acute or chronic, in the latter form it is difficult of differentiation from carcinoma. The diagnosis is difficult because there are no pathognomonic signs. An illness extending over a period of a year or more, accompanied by signs of pyloric obstruction, diarrhea, fever and tuberculosis elsewhere, is highly significant. Biopsy of a supraclavicular lymph node may aid materially in making the diagnosis. In the differential diagnosis, carcinoma of the pylorus, syphilis, gastric ulcer, carcinoma of the biliary tract and the head of the pancreas, metastatic carcinomatous lymph nodes at the pylorus and benign tumors of the stomach should be taken into consideration. The treatment was surgical. The successful operative measures were a gastro-enterostomy and a resection. The resection gave the higher percentage of statistical cures, chiefly because the process was chronic and the tumor considered to be cancer. The true diagnosis was not made until the routine sections were seen. The lower percentage of gastro-enterostomy was due to the fact that this operation was frequently done for palliative reasons only. The operation of choice is a resection for chronic cases and a gastro-enterostomy for more acute ones. The prognosis is bad. The author attempted to produce this condition in dogs by injecting tubercle bacilli into the pyloric region. The acute inflammatory process which appeared in the stomach wall was soon transformed to the neighboring lymph nodes, leaving the original site of inoculation with only a few signs of a chronic inflammation.

### Pulmonary Atelectasis and Simulating Conditions

According to Dubrow, the roentgen shadow generally associated with pulmonary atelectasis, a homogeneous dense shadow, obliterating the parenchymal lung markings and associated with a retraction of the heart and trachea to the same side, combined with an elevation of the homolateral dome of the diaphragm, is not necessarily pathognomonic for this condition. Croupous pneumonia of one entire lung may cast a shadow similar to that of atelectasis. Other conditions, such as unilateral pulmonary tuberculosis with a tendency to fibrosis and pleural thickening, may simulate the roentgen appearance of pulmonary atelectasis. When the mediastinum is fixed, a unilateral pleural effusion may cast a shadow resembling that associated with atelectasis. Certain therapeutic procedures, for instance the use of aromatized oil in oleothorax, tend to produce thickening of the pleura and stiffening of the mediastinum, and cast a shadow similar to pulmonary atelectasis. In doubtful cases, when the roentgenogram has an appearance suggestive of pulmonary atelectasis, pleural puncture may prove valuable in differential diagnosis, yielding fluid in cases of effusion, high manometric readings with atelectasis, and no readings at all in cases presenting a thickened pleura.

**Massive Atelectasis**—Sokol considers an acute or subacute febrile complication, produced by the obstruction of a bronchus and followed by a more or less complete absorption of vesicular air in the corresponding portion of the lung, thus giving to the organ a structure resembling fetal lung, applicable to all types of massive atelectasis. It is characterized by the clinical symptoms of unilateral pulmonary consolidation, with displacement of the mediastinum and its contents toward the affected side. The etiologic causes of massive atelectasis may be intrabronchial, extrabronchial and idiopathic. The author reports two cases: one extrabronchial, caused by a fibrous strand, and the other intrabronchial plugging, caused by a blood clot or cast. The main conditions from which atelectasis must be differentiated are pneumonia, spontaneous collapse and pleurisy with effusion, as well as acute dilatation of the heart, infarction, diaphragmatic hernia, pulmonary embolus and thrombosis. From the standpoint of symptomatology, massive atelectasis and spontaneous pneumothorax are greatly similar but can be easily differentiated by physical observations and roentgen studies. A case complicated by artificial pneumothorax, especially in the early stages of the atelectasis may be confusing. The roentgenograms in both cases reported by the author showed an extensive pneumothorax and, before the absorption of air from the alveoli was complete, resulted in displacement of the mediastinum toward the affected side, differential diagnosis was not possible without an accurate determination of the intrapleural pressure. Artificial pneumothorax has proved to be one of the main treatments of choice.

## Annals of Surgery, Philadelphia

96 51 800 (Oct.) 1932

- Address of President, Surgery of Sympathetic Nervous System C H Mayo Rochester Minn—p 481
- Carcinoma of Mouth and Tongue J Fraser Edinburgh Scotland—p 488
- \*Pathogenesis and Symptoms of Chronic Obliterative Appendicitis I S Horsley Richmond Va and H I Warthen Jr Baltimore—p 515
- Acute Appendicitis: Brief Criticism F W Bailey St Louis—p 530
- \*Treatment of Appendicitis Complicated by Peritonitis A M Shipley and H A Bailey Baltimore—p 537
- Closing Very Large Hernial Openings W E Gallie Toronto Canada—p 551
- Abdominal Incisions and Their Closure A D Bevan Chicago—p 555
- Hernia of Ureter A V Moschowitz New York—p 575
- Surgical Treatment of Hemorrhagic Duodenal Ulcer D C Balfour Rochester Minn—p 581
- Carcinoma of Stomach: Analytic Survey C Catewood Chicago—p 588
- Calcium Carbonate Callstones and Their Experimental Production D B Phenister Lois Dav and A B Hastings Chicago—p 595
- Mechanism of Cholesterol Callstone Formation L Andrews L E Dostal M Coff and I Hrdina Chicago—p 615
- \*Tuberculosis of Thyroid Gland F W Rankin and A S Graham Rochester Minn—p 625
- Parathyroidism M Ballin Detroit—p 649
- Aneurysm of Innominate Artery A Schweizer St Paul—p 666
- Subclavian Aneurysm E Lhot Jr New York—p 670
- Surgical Treatment of Postoperative Saphenous Thrombophlebitis H B Stone Baltimore—p 683
- Azygos Venous System in Its Relation to Sepsis E Beer New York—p 687
- \*Intravenous Injection of Sclerosing Substances: Experimental Comparative Studies of Changes in Veins A O Hsner New Orleans and F Carside Chicago—p 691
- Differentiation of Spastic from Organic Peripheral Vascular Occlusion by Skin Temperature Response to High Environmental Temperature F A Collier and W C Maddock Ann Arbor Mich—p 719
- General Care of Peripheral Vascular Diseases M R Reid Cincinnati—p 733
- Observations on Sympathetic Vasmotor Pathways A W Oughterson S C Harvey and Helen C Richter New Haven Conn—p 744
- Quantitative Determination of Vasoconstrictor Spasms as Basis for Therapy in Peripheral Arterial Diseases J J Morton and W I M Scott Rochester N Y—p 754
- Surgical Treatment of Certain Vascular Disorders by Sympathectomy D E Robertson Toronto Canada—p 767
- Raynaud's Disease: Thrombo Angitis Obliterans and Scleroderma: Selection of Cases for and Results of Sympathetic Gangliectomy and Trunk Resection W J Mayo and A W Adson Rochester Minn—p 771
- Treatment of Trigeminal Neuralgia by Cerebellar Route W E Dandy Baltimore—p 787
- Infrequency of Carcinoma of Cervix with Complete Prolapsed Uterus Cuthrie and W Bachle Sayre Pa—p 796

**Chronic Obliterative Appendicitis**—Horsley and Warthen state that chronic obliterative appendicitis is the result of a chronic inflammatory process that tends to destroy the mucosa and obliterate the lumen of the appendix. It may last for many years. It may exist in any stage from involvement of a small portion at the tip to complete obliteration of the entire lumen of the appendix. It may be found at any age from 5 years upward but is more frequent in the elderly. Acute appendicitis or even rupture of the appendix may occur in an appendix that has been partially obliterated. The authors report a small series of thirteen cases in which there was complete obliterative appendicitis and in which the operation was solely for appendicitis; there were definite symptoms before operation. Eight of the patients have been entirely relieved of their symptoms; three have been partially relieved and two were not relieved. Complete obliterative appendicitis may produce marked symptoms which may be relieved by removal of the appendix. While a complete obliterative appendicitis occurs incapable of producing a serious peritonitis it may cause discomfort that can be relieved only by operation. An accurate diagnosis of chronic obliterative appendicitis is difficult until the abdomen is opened and right-sided lower abdominal pain should be carefully investigated before any such diagnosis is ventured. Ureteral lesions, a small hernia, ulcers in the terminal ileum or cecum, arthritis or lesions of the spine and disease of the sacro-iliac joint should be considered before a final clinical diagnosis of chronic obliterative appendicitis.

**Treatment of Appendicitis with Peritonitis**—On the basis of a study of 251 patients operated on for appendicitis at the University Hospital Baltimore since June 1930 Shipley and Horsley believe that each case of complicated hernia presents a different cause of intestinal obstruction. In the treatment of the peritonitis the treatment of the hernia is the first consideration. Drainage of the peritoneal cavity is essential.

in the lower part of the abdomen often causes widespread adhesions between loops of intestine, mesentery, omentum, pelvic organs and abdominal wall. Drains are soon obstructed and do not drain any considerable portion of the peritoneum. Paralytic ileus seriously obscures the clinical picture when drains are left in the abdomen. Pelvic drains increase the incidence of postoperative retention of urine. Drained abdomens are more likely to develop troublesome, painful, or disabling late postoperative adhesions. Late intestinal obstruction is more likely to occur in drained than in undrained abdomens. None of these considerations should carry any weight if the risk to life is increased by closure without drainage. Evidence is accumulating that the introduction of drains into the abdomen in the treatment of early peritonitis may be dispensed with, without increase in the death rate.

**Tuberculosis of Thyroid**—In the course of a microscopic study of 20758 thyroids removed surgically at the Mayo Clinic over a period of eleven years, tuberculosis was diagnosed in twenty-one, an incidence of approximately 0.1 per cent. Rankin and Graham tabulate separately 104 cases of surgically treated tuberculosis of the thyroid reported in the literature, and the twenty-one cases from the Mayo Clinic. The combined data reveal a marked predominance of women patients evenly distributed over the fourth and fifth decades. Although evidence of active tuberculosis was present in only six of 125 cases and suspected in five others the prevailing opinion is that probably all cases are secondary to some disease process elsewhere in the body. Diagnosis prior to microscopic study of tissue removed at operation is extremely rare, only three such instances are recorded. It was impossible from a detailed study of their data in the twenty-one cases to determine criteria by which a clinical diagnosis could be made. The principal syndrome exhibited by their patients was that of hyperthyroidism which was noted in fifteen cases, with an increased basal metabolic rate of plus 19 per cent or higher. The question of whether the hypertrophic gland is rendered more susceptible to invasion by the bacillus of tuberculosis or the infection stimulates the parenchyma to abnormal activity, and is thus indirectly responsible for the hyperthyroidism, could not be conclusively determined. They noted evidence of thyroid deficiency after thyroidectomy in only three of 115 cases. Diffuse milky tuberculosis, in which there were typical epithelioid tubercles and giant cells, was by far the most common observation; caseation was reported in about a fifth of the cases studied; abscess, and evidences of marked sclerosis were less frequently noted. Tuberculosis occurred in an adenomatous goiter in fifty-one cases, in a hypertrophic parenchymatous gland in thirty-one cases and in a colloid gland in six cases. Convalescence after thyroidectomy in these cases was not different from that of cases of uncomplicated adenomatous or exophthalmic goiter and as in these, the same excellent prognosis can be given.

**Intravenous Injection of Sclerosing Substances**—Ochsner and Garside present a comparative study of the effects of twenty different sclerosing substances on the veins of twenty-seven dogs. In all 348 histologic examinations were made extending from half an hour to eight weeks after the injection. The changes in the vein wall consisted of destructive inflammatory and reparative changes. They observed endothelial destruction in 45.1 per cent of the veins. It was greatest in the veins examined on or before the fourth day. Regeneration of the endothelium occurred in a large number of instances between the fourth and sixth days. Other destructive changes in the endothelium were vacuolization and partial destruction of the endothelial cell. The inflammatory reaction consisted of edema (83.7 per cent), leukocytic infiltration (8.6 per cent) and dilatation of the vasa vasorum (88.2 per cent). The reparative changes consisted of muscle hypertrophy (70.7 per cent) and fibrosis of the vessel wall (50.5 per cent). Thrombi occurred in only 13.2 per cent of all veins; of these, 67.4 per cent were fibrinous and 34.8 per cent were fibrous. Canalization of fibrous thrombi occurred in 94.4 per cent. A 40 per cent solution of sodium salicylate produced greatest injury to the vein wall and the largest number of thrombi. In combination the results obtained in their experimental investigation with their clinical experience the authors feel that of the group of agents studied invertin 75 per cent alone or combined with sclerosol, 5 per cent should be used for routine

clinical use. If these fail, quinine and urea hydrochloride and the higher concentration of sodium salicylate (40 per cent) should be used.

**Peripheral Vascular Diseases**—Reid states that in the management of peripheral vascular diseases it is of the utmost importance to secure and maintain the interest and active cooperation of the patients. The position of maximum circulation of the affected parts when at rest should be determined for each case. Too much elevation more effectively reduces nourishment and more frequently causes gangrene than does too much dependence. The effect of cold is evident from the high incidence of complications during the winter months. The affected extremities should be made as soft and delicate as possible. The most trivial wounds and infections should be treated as major complications until they are completely healed. Any form of trauma to inflamed or diseased vessels should be avoided by both the patient and the physician. The author discusses the possible dangers of the tourniquet and blood pressure apparatus, as well as certain forms of exercise and passive massage. In order to teach patients the Buerger or Allen voluntary exercises, a short period of hospitalization is desirable. Amputations performed between two tourniquets for gangrenous and infected extremities reduce the incidence of infection of the stumps. If, for fear of injury to tissues and blood vessels, the use of a tourniquet is contraindicated, the distal tourniquet alone may be used. The fluid intake should be established and maintained on a high level. Thyroid extract may help to improve the circulation. All foci of infection should be eliminated. It is the author's policy to advise abstinence from the use of tobacco and alcohol. The routine examination of all peripheral pulses would result in earlier diagnoses of peripheral vascular diseases and would make possible the avoidance of many complications that are frequently the direct cause of amputations.

### Archives of Neurology and Psychiatry, Chicago

28 969 1242 (Nov.) 1932

- Frequency with Which Tumors in Various Parts of Brain Produce Certain Symptoms. F. A. Gibbs, Philadelphia—p. 969
- \*Tumors of Third Ventricle. S. S. Allen and H. W. Lovell, Ann Arbor, Mich.—p. 990
- Disorders of Optic Nystagmus Due to Cerebral Tumors. J. C. Fox, Jr., New Haven, Conn.—p. 1007
- Cytogenesis of Oligodendroglia and Astrocytes. O. W. Jones, Jr., San Francisco—p. 1030
- Effects of Necrobiotic Agents on Walls of Cysts Experimentally Produced in Brains of Dogs. R. Zollinger and A. R. Moritz, Cleveland—p. 1046
- Nerve Degeneration in Polomyelitis. V. Correlation of Fiber Changes in Nerves with Cellular Changes in Spinal Cord. W. P. Covell, St. Louis—p. 1056
- \*Encephalitis Disseminata. Clinical and Anatomic Report of Case with Features Akin to Multiple Sclerosis and Diffuse Sclerosis. J. C. Gill and R. Richter, Chicago—p. 1072
- Posthemiplegic Athetosis. Report of Case. Role of Corticospinal Pathways in Production of Choreiform and Athetoid Movements. J. M. Thomas, Boston—p. 1091
- Action Currents in Central Nervous System. I. Action Currents of Auditory Tracts. L. J. Saul and H. Davis, Boston—p. 1104
- \*Nonspecificity of Histologic Lesions of Dementia Paralytica. F. Wertham, New York—p. 1117
- Injury and Repair Within Sympathetic Nervous System. II. Postganglionic Neurons. S. S. Tower and C. P. Richter, Baltimore—p. 1139
- Id. III. Evidence of Activity of Postganglionic Sympathetic Neurons Independent of Central Nervous System. S. S. Tower and C. P. Richter, Baltimore—p. 1149
- Panic. O. Diethelm, Baltimore—p. 1153
- Combination Therapy of Induced Narcosis and Fever. Its Effect on 'Affective Syndrome'. Preliminary Report. A. W. Hackfield, Zurich, Switzerland—p. 1169

**Tumors of Third Ventricle**—Allen and Lovell state that tumors arising in the posterior portion of the third ventricle are relatively infrequent. From the study of eight cases, which they report, they believe that hydrocephalus and increased intracranial pressure resulting from obstruction to the aqueduct of Sylvius are constant. Lesions in this location usually produce no characteristic symptoms or localizing signs. The most commonly noted observations are papilledema, increased intracranial pressure, hypersomnia, disturbances of pupillary reaction, extra-ocular palsies, vegetative dyscrasias and precocious sexual development. Cerebellar symptoms are often confusing and the lesion is erroneously ascribed to the hindbrain. Sudden death is frequent. Paralysis of upward associated ocular movements and precocious sexual development in male children before the age of puberty are the most important clinical observations, in

the absence of which the clinical diagnosis of pineal tumors is almost impossible. Frequent visualization of the lesion by ventriculography makes this a most important diagnostic procedure.

**Encephalitis Disseminata**—Gill and Richter present the detailed report of a case of encephalitis disseminata with the purpose of adding a new and somewhat unusual example, but also because the material affords data they consider pertinent to the old and currently active controversy respecting the nature and true nosologic significance of multiple sclerosis, as well as to similar questions in the realm of the more recently elaborated disease concepts relating to the leukencephalitides of a diffuse kind (diffuse sclerosis, Schilder's disease, progressive subcortical encephalopathy, and so on). The authors, in searching the literature for cases similar to theirs, found three like it. Each of these was reported under a different name. One was the case of encephalomyelitis of Jakob, one a case of neuromyelitis optica and the other a case of Schilder's disease. They emphasize the fact that when most of the cases of multiple sclerosis, of disseminated encephalomyelitis and of Schilder's disease are examined, it is apparent that there are great differences between them. In general, they are entities. This is also evidently true for that group of encephalitides occurring in association with vaccinia and certain infectious diseases, such as variola, influenza and measles.

**Histologic Lesions of Dementia Paralytica**—Wertham gives a description of the histologic lesions of a new spontaneous disease in chickens, the etiology of which is not yet determined. The three chief histologic signs of this condition are infiltration of small vessels with plasma cells, proliferation of Hortega cells with formation of rod cells, and iron deposits in intra-adventitial spaces and in the Hortega cells. He points out that these correspond to what must be considered the three cardinal histologic signs of dementia paralytica (the changes of the nervous parenchyma in dementia paralytica are diagnostically less significant because they are uncharacteristic and may be inconspicuous in early cases). The demonstration of this spontaneous disease in chickens shows that the essential histologic lesions of dementia paralytica are unspecific and that they constitute a pathologic reaction of the central nervous system, possible under totally different biologic and etiologic conditions. It seems likely that lesions in the brain that have been ascribed to infectious or nutritional diseases in birds are at least in part due to the spontaneous disease that he describes. The evidence given here, that the so-called dementia paralytica iron, which has been regarded as specific for dementia paralytica, occurs also in animals, opens a path to the closer study of the development of this important neuropathologic phenomenon, which is as yet only descriptively known. In the author's study the central nervous system of birds was for the first time histopathologically examined with a combination of all the pertinent modern methods used in human neuropathology.

### Archives of Otolaryngology, Chicago

16 603 766 (Nov.) 1932

- Inherent Healing Properties of Abscess of Brain. Clinico-Anatomic Survey of Fifteen Verified Cases. J. H. Globus and W. L. Horn, New York—p. 603
- \*Relation of Vitamins A, D, B and G to Otolaryngology. C. C. Cody, Houston, Texas—p. 661
- \*Carcinoma of Larynx. Clinical and Pathologic Aspects. L. H. Clerf and B. L. Crawford, Philadelphia—p. 676
- Asymmetry of Nares. Positive Diagnostic Sign or Entity Establishing Anatomic Displacement of Lower End of Cartilaginous Nasal Septum. M. Metzenbaum, Cleveland—p. 690
- \*Maxillary Sinusitis. Practical Clinical Suggestions on Diagnosis and Treatment. W. W. Carter, New York—p. 698
- Dynamics of Nasal Respiration. E. Krimsky, Brooklyn—p. 705

**Vitamins and Otolaryngology**—From his experimental study on rats and a clinical study of five patients who were given vitamins B and G in the form of brewers' yeast and five controls, Cody concludes that vitamin A is necessary to maintain the nutrition of the nasal, aural and tracheal epithelia. The nasal mucosa is affected before and recovers after the ocular mucosa. Eventually, the metaplastic and inflammatory changes of the deficiency are cured by a normal diet. Prophylactically, vitamin A seems to increase the resistance to infection of the upper respiratory tract in children. Therapeutically, its chief value is to improve the nutrition of the nasal and aural mucous membranes in acute and chronic infections. While this avitaminosis may be an etiologic factor in atrophic rhinitis, further investigation is required before deciding its status. A diet

deficient in vitamin D has no effect on the nasal, aural and tracheal mucosa. It produces no lesion in the osseous labyrinth in the rat that resembles otosclerosis in the human being. Deficiency in vitamin B is identified with a definite nasal syndrome, consisting of a postnasal mucous discharge, and the posterior tips of the middle turbinates are smooth, moist, creamy white and slightly thickened. Deficiency in vitamin G has no effect on the ear, nose or throat.

**Carcinoma of Larynx**—A series of thirty-two cases of cancer of the larynx, in which the patients were operated on prior to three years ago, was studied by Clerf and Crawford. They performed biopsy in every case to confirm or to establish a diagnosis. No ill effects from this procedure were noted. In the grading of the tumors six were considered as of low grade malignant condition, twenty were intermediate and six were placed in the anaplastic group. They conclude that biopsy should be performed in every case in which laryngeal disease is suspected. A specimen of tissue properly removed and prepared and studied by a competent pathologist, affords an important aid in diagnosis. The cell type of a tumor should be considered in conjunction with the age of the patient, the location and extent of the lesion and the duration of the disease in determining the form of treatment to be carried out. As a rule, metastasis from laryngeal cancer does not occur early, this should encourage increased efforts at early diagnosis and surgical treatment.

**Maxillary Sinusitis**—Carter emphasizes the following points which he evolved and evaluated from his personal clinical experience in the diagnosis and treatment of maxillary sinusitis: 1. A sinus cannot be healthy without free aeration and drainage. 2. Healthy cilia indicate a healthy sinus. If ciliated epithelium is completely destroyed it is never regenerated. In all operations, therefore, one should save as much of the lining membrane as possible. 3. Iodized oil is not to be relied on in determining either the contents of the sinus or the condition of its walls. 4. Adventitious tissue in the antrum is, as a rule, an indication for a radical operation; the Caldwell-Luc procedure being best suited for most of these cases. 5. Maxillary sinusitis, primarily of dental origin, is unusual. Most of these cases are the result of middleme interference with infected root cavities after extractions. 6. Focal infections from the sinuses are probably of rare occurrence; they are difficult to trace, and the conclusions are often clouded by uncertainty.

### Archives of Surgery, Chicago

25 819 1010 (Nov.) 1932

- Etiology of Inoperative Peptic Ulcers. M. E. Steinberg and J. C. Proffitt. Portland, Ore.—p. 819.
- Experimental Ileus. II. High Obstruction with Biliary, Pancreatic and Duodenal Secretions Along with Food and Sodium Chloride Entering the Bowel Below the Obstructed Point. H. P. Jenkins. Chicago.—p. 819.
- Whitman Reconstruction Operation on Hip Joint. Analysis of Late Results. C. S. Lowndorf. Youngstown, Ohio.—p. 863.
- Changes in Symphysis Pubis and Sacro-Iliac Articulations as Result of Pregnancy and Childbirth. F. J. Lang, and L. Haslhofer. Innsbruck, Austria.—p. 870.
- Syphilis of Stomach. Review of Literature and Report of Case. C. B. Morton. University. N. Y.—p. 880.
- Adamantinoma. Case of Fifty One Years Duration. Virginia Kneeland. Lantz and I. Stix. New York.—p. 890.
- Lobectomy and Pneumectomy in Dogs. Experimental Surgery. W. E. Adams and H. M. Livingstone. Chicago.—p. 895.
- Internal Hernia. Three Additional Case Reports. C. R. Steinke. Akron, Ohio.—p. 907.
- Labio-Interventions of Cell and Tissues and Some Medical Implications. A. U. De J. L. Lecher. Munich.—p. 926.
- Internal Hernia. Consideration of Literature. H. J. Shelley. New York.—p. 943.
- Acute Pancreatitis. Sixty Four Cases. C. I. McWhorter. Chicago.—p. 948.
- Review of Urinary Surgery. A. I. Schell, I. Angelo, L. S. Judd, K. Leuter. Munich. I. D. Keyser, R. Knecke, A. J. Verbrugge, Artwerp. Leipzig. A. A. Kutzman, Los Angeles. A. B. Hepler, Seattle and I. Cutler. New York.—p. 991.

**Experimental Ileus**—According to the experiments of Jenkins on dogs, the variability of the length of life of the animal with high intestinal obstruction cannot be easily explained by either the toxic theory or that of the loss of effective peristalsis. The proffered life of the animals that lived for three to five weeks however does appear to fit in with the theory of a selective secretion. This increased life is not observed in the case of animals with simple obstruction of the small intestine. The selective secretion may possibly be

due to the resorption of the biliary, pancreatic and duodenal secretions below the point of obstruction, along with some resorption of gastric juice in the obstructed segment of jejunum. The maintenance of the blood chlorides at a fairly high level during the period of obstruction, as compared with the fall in chlorides, was due to the replacement of chlorides lost in the vomited gastric juice by the sodium chloride present in the milk, as well as by that which was added to it, and in one instance by gastric juice. Nevertheless, this does not explain why some of the animals died in from four to twelve days without a fall in chlorides, without distention of the obstructed intestine and without any other apparent cause than the presence of an obstruction. Furthermore, it would be difficult to explain the death of the animals on the basis of toxemia when there was practically no distention of the obstructed portion of the intestine.

**Reconstruction Operation on Hip Joint**—Lowndorf presents an analysis of the end-results of fifteen cases in which a Whitman reconstruction operation was performed. The operation is indicated in ununited fracture of the neck of the femur and arthritides of the hip to alleviate pain, deformity or instability and to allow useful ranges of motion. The operation carries a moderate surgical risk. All patients who were operated on because of ununited fracture of the neck of the femur showed a good result. The final outcome is less certain in patients with arthritic lesions, yet the results obtained were satisfactory enough to make the operation advisable in this group of cases. There was only one complete failure in the author's series.

**Lobectomy and Pneumectomy**—Adams and Livingstone report the results they obtained in experimental lobectomy and pneumectomy performed on twenty dogs without a single death. All the pulmonary lobes on one side were extirpated in eight dogs with the death of one animal. They conclude that the preliminary production of complete stenosis of the pulmonary lobe bronchus preceding lobectomy was simple and accompanied by no mortality when a solution of silver nitrate of 35 per cent or less was employed. They found that, by using this procedure, danger of pleural infection or pneumothorax following the subsequent amputation of the pulmonary lobes was obviated, an air tight closure of the bronchial stump having been produced prior to the removal of the pulmonary lobe. Postoperative pleural infection and pneumothorax having been obviated, the mortality accompanying the procedure was practically nil. No postoperative complications arose as the result of reopening a stenosed bronchial lumen. During the operation, hemostasis was readily obtained and the pulmonary lobes were easily removed owing to their having shrunk down to the atelectatic condition. Complete pneumectomies were performed in from twenty to thirty minutes and the subsequent removal of a lobe on the opposite side was accompanied with equal ease and success. The authors are using this procedure in studies on the cardiorespiratory physiology of bilateral subtotal pneumectomized dogs and they are preparing to test its clinical application.

**Acute Pancreatitis**—McWhorter states that the division of acute idiopathic pancreatitis into simple edematous or non-hemorrhagic hemorrhagic necrotic or gangrenous or suppurative pancreatitis is of value in the study of this highly fatal condition. In the author's sixty-four patients, gross infection of the pancreas was found to be present more frequently in men. Some type of inflammation of the gallbladder or stones was present in 55 per cent of all the cases. Gallstones were present in fewer men than in women. Only 30 per cent of the men who died had gallstones as compared to 53 per cent of the women. The mortality rate of 62 per cent in men and 47 per cent in women indicates the presence of other factors than gallstones affecting the mortality. Acute inflammation of the gallbladder was present in only 22 per cent of all the cases. Evidences of obstruction of the common duct were found in a few cases. In two an impacted stone was found in the ampulla at necropsy. There was little evidence of a regional distant focus of infection existing before the onset of pancreatitis. In the majority of the cases pathologic changes were not found outside the pancreas and the bile tracts. Gallstones in addition to obstructing the ampulla may predispose to pancreatitis even when in the gallbladder. There was a definitely lower mortality in the cases in which operation was performed from the second to the fourth day after the onset of the disease. Early diagnosis



is important, as the patients not operated on died, and should be followed by an emergency operation, unless the patients are moribund or definitely improving. Drainage of the pancreas should be established in all cases, except in the mild edematous type in which prophylaxis against infection may seem unnecessary. Exploration of the biliary tract followed by drainage should be done in all cases, particularly in the presence of inflammation, gallstones or jaundice. In cases in which evident infection is localized in the pancreas, after the first few days, drainage should be limited to the pancreas. In an effort to reduce the mortality, one must attempt to reduce the incidence of pancreatitis, including the prevention of and treatment for obesity, gallstones and foci of infection. Prophylaxis by the early removal of gallstones and well chosen operations on the gallbladder for acute and chronic cholecystitis may prevent hepatic, pancreatic and other serious complications.

### Journal of General Physiology, Baltimore

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- Measure of Excitability H. A. Blair —p. 165  
Effects of Radiations on Biologic Systems I. Influence of High Frequency Roentgen Ray Radiation on Duration of Prepupal Period of *Drosophila* R. Hussey, W. R. Thompson, R. Tennant and Nancy DuVal Campbell, New Haven, Conn. —p. 207  
Study of Effects of Certain Variations in Preparation of a Starch Substrate in Amylase Viscosimetry C. H. Wies and Sara M. McGarvey, New Haven, Conn. —p. 221  
Factors Involved in Use of Organic Solvents as Precipitating and Drying Agents of Immune Serums M. H. Merrill and M. S. Fleisher, St. Louis —p. 243  
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Id. V. Kinetics of Digestion of Proteins with Crude and Crystalline Trypsin J. H. Northrop —p. 339  
Bioelectric Potentials in Valonia. Effect of Substituting KCL for NaCL in Artificial Sea Water E. B. Damon —p. 375

### Michigan State M. Society Journal, Grand Rapids

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- Recent Advances in Community Prevention of Tuberculosis. Observations on Thirty Five Thousand Students D. S. Brachman, Detroit —p. 683  
Significance of Circulatory Disturbance in Certain Psychoses After Fourth Decade of Life T. Klingmann and H. S. Millett, Ann Arbor —p. 694  
\*Fallacies and Merits of Sensitization Tests G. L. Waldbott, Detroit —p. 698  
Prevention of Symblepharon. Case and Description of Appliance Used F. A. Baker and B. T. Larson, Pontiac —p. 702  
Endocrinology in Obstetrics R. L. Schaefer and W. L. Brosius, Detroit —p. 703  
\*Epidermophytosis of Hands and Feet A. E. Schiller, Detroit —p. 705  
Syphilitic Cirrhosis of Liver Case R. L. Fisher and J. B. Blashill, Detroit —p. 711

**Fallacies and Merits of Sensitization Tests**—According to Waldbott, in allergic patients sensitization tests should not be regarded as a definite indicator of clinical sensitivity. Negative skin tests in the presence of clinical sensitivity occur in cases of long standing asthma, in old age, occasionally after asthmatic attacks, after an anaphylactic reaction, with old extracts, and after administration of epinephrine. Unreliable positive tests were observed with too concentrated solutions, with extracts containing histamine or like substances in patients with sensitive skin, near the site of a wheal, and with bacterial products, fungi and certain internal gland products. Borderline ("plus-minus") and delayed reactions are of greatest importance in patients whose skin is little responsive to the testing.

**Epidermophytosis**—Schiller believes that epidermophytosis is today, in all probability, the most common skin disease that one encounters. It has been known since 1860 and has been particularly of interest since 1919. A summary of the incidence, including the age, duration of disease, occupation and so on, is given by the author. The symptoms of the condition are varied because of the parts affected and because of the frequency of secondary infection and occupational dermatoses. The etiologic factors to be considered are the floors of shower baths, swimming pools, gymnasiums, walks of bathing beaches, leather, silk and wool garments and, above all, carelessness in observing the rules of hygiene. The microscope, the culture tube and injections of trichophyton are aids in diagnosing the disease. The treatment of the disease is varied and presents considerable difficulty. The author presents a number of formulas

### Military Surgeon, Washington, D. C.

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- Rewards of Medicine in the Army P. M. Ashburn —p. 293  
Research in Military Preventive Medicine as Vital Factor in National Defense J. S. Simmons —p. 296  
Meningococcal Septicemia. Report of Case Successfully Treated with Intravenous Polyvalent Antimeningococcus Serum S. F. Seeley —p. 309  
The London School of Hygiene and Tropical Medicine G. C. H. Franklin —p. 314  
Physical Examination of Employees of Government Bureau in Manila, Philippine Islands P. T. Russell and R. L. Holt —p. 322

### Minnesota Medicine, St. Paul

15 729 796 (Nov.) 1932

- Hyperparathyroidism J. deJ. Pemberton, Rochester —p. 729  
Vaccination Prevents Smallpox. An Answer to the Antivaccinationist R. T. Westman, Minneapolis —p. 734  
\*Factors of Safety in Emergency Abdominal Surgery V. S. Counseller, Rochester —p. 744  
Acute Conditions of Abdomen F. J. Plondke, St. Paul —p. 753  
\*Abscess of Liver A. N. Collins, Duluth —p. 756  
Diverticula of Gastrointestinal Tract R. G. Allison, Minneapolis —p. 763  
Globus Hystericus A. Sinamark, Hibbing —p. 767  
Emergency Treatment of Eye Injuries H. W. Grant, St. Paul —p. 771  
Ocular Lesions of General Diseases J. F. Brusegard, Red Wing —p. 773  
\*Treatment of Epidermophytosis L. A. Brunsting, Rochester —p. 777

**Emergency Abdominal Surgery**—The use of a 6 per cent solution of acacia as a substitute for blood transfusion in the treatment of shock in emergency abdominal conditions, such as rupture of the spleen and gunshot wounds of the abdomen, is stressed by Counseller. It is nontoxic, is easily prepared, and can be kept as a stock solution for many months without deteriorating. It rapidly restores and maintains blood volume. The continuous administration of small amounts of solution of acacia during operation, if shock is anticipated, is a distinct advance in prevention. Patients who sustain injury over the splenic region, although the injury may seem insignificant, should be kept under observation from ten to fourteen days. If there is continuous rigidity, and if splenic dullness is progressing, immediate surgical intervention has been shown to be the best course to pursue. In gunshot wounds of the abdomen, closure of the perforations, or resection of the intestine with end-to-end anastomosis, if the blood supply to the intestine has been destroyed, are the operations of choice. If there are multiple perforations, with considerable soiling of the peritoneal cavity, it is advisable to perform enterostomy above the injured portion of the intestine, and to wash out the abdomen with warm saline solution. Metaphen, 1,000, or a 2 per cent aqueous solution of mercurochrome may be used to advantage in the peritoneal cavity. In gunshot wounds of the right half or dome of the liver, it may be judicious to postpone surgical intervention, but continuous observation of the patient must be maintained. In acute intestinal obstruction, preoperative preparation by intravenous administration of physiologic solution of sodium chloride and dextrose solution rapidly restores chemical values of the blood to normal and renders the patient a safer operative risk. Early operation is imperative when the fluid balance is restored. Spinal anesthesia is advisable in early cases and may result in spontaneous cure, but if this does not take place, immediate exploration can be done and the obstruction relieved. In delayed cases, enterostomy alone is advisable, usually performed under local anesthesia. Further exploration is to be condemned.

**Abscess of Liver**—Collins found that, in 18,300 necropsies, 0.06 per cent of the deaths were due to liver abscess. No specific symptom group seems pathognomonic of liver abscess. In the author's brief review of fifty cases of septic liver abscess, pain, which occurred in 70 per cent, was sometimes completely absent. The high irregular septic fever present in 68 per cent of the cases furnished a hint of possible septic portal involvement. If, however, together with pain and high fever, the additional symptoms of chills and jaundice are demonstrable and liver tenderness is obtainable either by means of Ludlow's thumb thrust or Murphy's fist percussion, coupled with signs of liver enlargement, one should feel justified in advising surgical exploration. Appendicitis is not an infrequent precursor, but cholelithiasis, cholecystitis, cholangitis and inflammatory lesions surrounding the liver area are considerably more frequent, amounting in his series to 50 per cent. Exploratory puncture is useful when the liver is exposed at the operating

table. A single abscess in the right lobe furnishes the best surgical prognosis. The earlier one discovers the abscess the better for the life of the patient and for the success of the surgeon. Even in this single-lobe, single-abscess type the mortality is considerable. Adequate drainage at operation is important. Necropsies have in many cases shown inadequate drainage.

**Treatment of Epidermophytosis**—According to Brunsting, a favorite standby in the treatment of epidermophytosis is Whitfield's ointment, a combination of benzoic and salicylic acids which is probably beneficial by reason of its exfoliative action. Iodine in solution in benzene or acetone in weak dilution, is highly efficient. Recent research has indicated that certain mercurial compounds, a mercurated fuchsin and a mercurated crystal violet are highly fungicidal as compared with the more popular but weak mercurochrome. During the acute vesicular stage of the infection it is best to rely on the application of mildly antiseptic and soothing compresses and soakings of which potassium permanganate, copper sulphate and a preparation of aluminum subacetate are most popular. In the more chronic stages the use of occasional wet dressings will offset the irritating effects of the exfoliants and antiseptic chemicals. Attention to the nails is most important. Roentgen rays find their chief application when there is marked hyperhidrosis and a drying effect is desirable. Too little attention has been paid to the matter of prophylaxis and of prevention of recurrence or of reinfection. A particular form of treatment will not apply equally well to a number of patients, nor at different times to the same patient. The problem of individual predisposition is governed by factors often beyond the physician's control. The hydrogen ion concentration of the sweat may account to a certain extent for individual differences in patients. The frequent application of soap and water followed by a mild dusting powder such as 20 per cent sodium hyposulphite in powdered boric acid sprinkled in the hose will serve to control a large percentage of the milder cases. A period of mild treatment before the onset of warm weather is a most efficient preventive. The most efficient fungicides alone without recognition of the problem of prophylaxis and individual hypersensitivity, will fail to accomplish control of epidermophytosis.

#### Philippine Islands Med Association Journal, Manila 12 471-516 (Oct.) 1932

- Necessity of Survey of Our System of Medical Education. J S Hilario Santo Tomas Manila—p 471  
Role and Follow Up of Quiescent Cases of Leprosy and Associated Problems. C B Lara Cebu—p 476  
Role of Iodine in Iodized Oil Derivatives Used as Antileprotic Drugs. Trial of Plain and Iodized Olive Oil Ethyl Esters. C B Lara and I C Sam on Cebu—p 485  
Filipino Physiological Constants. III. Table of Normal Pulse Rates. W Pascual and J Salcedo Jr. Manila—p 494  
Acute Suppurative Meningitis in the New Born. Three Cases. J Albert and F N Quintos Manila—p 494  
Report on One Hundred and Seventy Four Cases of Ectopic Gestation. A Brien Manila—p 497  
Comparative Treatment of Trachoma with Acetic Acid and Chaulmoogra Oil. I O Tiong Cebu—p 502  
Lithium Therapy in Carcinomas of Tongue. R Fernandez Manila—p 504

**Treatment of Trachoma**—Tiong reports the results he obtained in the treatment of sixty one cases of follicular trachoma. Each patient received Hydnoarpus wightiana oil treatment for the right and acetic acid (25 per cent) solution for the left eye. A survey of the results was made six weeks and again nine months after the last treatment. Six weeks after the last treatment recovery had occurred in all the mild cases (twenty). Recovery occurred in thirteen of the moderate cases and improvement in nine. Recovery occurred in five and improvement in fourteen of the severe cases. In the groups in which recovery occurred in thirty eight cases and improvement in twenty three cases. Nine months after the last treatment nineteen of the patients who had recovered were still perfectly well, eight had had relapses and eleven were no longer treated and could not be followed up. Of the twenty-three patients who had not recovered improved in the first survey, had been treated for a second time and in other two had been treated for a third time. The mild cases recovered readily and the moderate cases required more or less than six weeks. The severe cases required more or less than six weeks.

tings, for complete recovery. The two methods of treatment were of practically the same efficacy, but the acetic acid produced more untoward effects.

#### Texas State Journal of Medicine, Fort Worth 28 379-442 (Oct.) 1932

- \*Strangulated Hernia Through the Foramen of Winslow. W B Russ, San Antonio—p 384  
Cervical and Endocervical Erosions. E H Bursey Fort Worth—p 387  
Ambulatory Treatment of Fractures Below Knee. H E Hipps, Marlin—p 391  
\*Fundamental Principles in Successful Treatment of Urinary Fistulas. R S Mallard Fort Worth—p 396  
Electrocoagulation of Tonsils. J M Potts Dallas—p 399  
Eye Fundus Lesions of Nephritis. A E Bulson Fort Wayne Ind—p 403  
Nephrotic Edema. S S Templin Galveston—p 407  
\*The Butler Meinicke Reaction. D R Venable Wichita Falls—p 409  
Comparison of Kolmer Wassermann and Hinton Flocculation Tests. J E Robinson Temple—p 412  
\*Pulmonary Metastatic Malignancy. Analysis of Radiologic Findings in Seventy One Cases. R C Giles Temple—p 414  
Acute Massive Pulmonary Atelectasis in Asthmatic Child. I S Kahn San Antonio—p 416  
Teamwork in Combating Cancer. Pathologic Point of View. J L Coforth Dallas—p 420  
Id Clinical Point of View. C L Martin Dallas—p 423  
Significance of Cardiac Pain. L H Reeves Fort Worth—p 425

**Strangulated Hernia**—According to Russ, intra-abdominal hernias occur chiefly at the duodenojejunal junction, in the ileocecal region and the sigmoid mesentery, and through the foramen of Winslow. The frequency with which intra-abdominal hernias occur cannot be determined, because they are not recognized unless strangulated. The mortality in strangulated hernias through the foramen of Winslow is high, because of the extreme difficulty and danger attending efforts at reduction and delay due to difficult diagnosis. It is interesting to note that no correct diagnosis has been made in any of the cases reported, except at operation or necropsy. The amount of intestinal herniation through the foramen of Winslow varies from a small knuckle to almost the entire small and large intestine. Males are more predisposed to all types of intra-abdominal hernias than are females. In the forty-one reported cases of strangulated hernia through the foramen of Winslow, there are five times as many males as females. There is no doubt that many cases with vague histories of upper abdominal distress are due to unsuspected hernia through the foramen of Winslow.

**Urinary Fistulas**—Mallard states that the first preliminary treatment common to all types of acutely infected urinary fistulas is diversion of the urine from the fistulous tract. Almost all recent fistulas will close promptly following dilation of a stricture of the urethra causing obstruction or diversion of the urine away from them. When a fistula has persisted for an indefinite period of time it usually means that there is some form of obstruction in the urethra and the fistula will close as soon as this obstruction is removed. In the operative treatment of fistulas all the scar tissue is removed and the dissection extended out into healthy tissue, unless in so doing one injures or removes some important structure. The opening in the mucous membrane of the urethra should be closed with a few sutures of number 00 chromic catgut but the remaining portion should be left well open and never sewed tightly. An iodiform gauze pack should be left in the wound. In the dissection of fistulous tracts of the penile urethra, the tract should be circumscribed and all the scar removed down to the urethra. The mucous membrane should be inverted with sutures and several sutures taken in the overlying tissues but the skin incision should not be closed. In the suprapubic region one is at liberty to dissect as much scar as desirable, provided the peritoneum is cared for. The bladder should be closed tightly with a double row of chromic catgut sutures and the rectus muscles and fascia drawn together with one or two number 1 chromic catgut sutures. The remaining portion of the wound should be left open and packed with iodiform gauze. The bladder should be drained with a urethral retention catheter. The same principle applies in closing the other types of fistulas such as vesicovaginal, recto-urethral and enterovesical. Every particle of scar possible is resected and the urine diverted from the fistulous tract. Dressings should be changed once or twice daily or as often as necessary to keep the wound clean. The author uses a 1 or 2 per cent solution of diiodamine in olive oil in the postoperative treatment of external fistulas.

**The Butler-Meinicke Reaction**—Venable believes that the Butler-Meinicke reaction is a most valuable test in the serum diagnosis of syphilis. It gives results in close agreement with the well established Kolmer Wassermann test and offers an excellent check on that system. It can be performed in any climate, as the reagents number only two and are very stable at ordinary room temperatures. No laboratory animals are required. The rapidity with which it may be performed with accuracy makes it particularly available in such emergencies as testing donors for blood transfusions. The Butler-Meinicke reaction is not proposed as a substitute for the Kolmer Wassermann test but as a valuable parallel test, the one supplementing and complementing the other.

**Pulmonary Metastatic Malignant Conditions**—Giles found that, of seventy-one cases of pulmonary metastatic involvement, the pulmonary metastases following operation for malignant conditions developed in forty-four, and twenty-seven were considered inoperable because of the pulmonary lesions at the time of entrance to the hospital. Routine roentgenologic examinations of the chest prior to operation will not infrequently establish the presence of pulmonary metastases. This diagnosis in many instances can be made only by the roentgenogram. It is therefore essential to search carefully for the presence of pulmonary metastases before the treatment of any new growth. A primary malignant condition may metastasize to the lungs, regardless of its location and without relation to the extent and duration of the primary focus. The clinical picture is indefinite in many cases, because neither the objective nor the subjective manifestations are characteristic of the condition. The author states that the five types of pulmonary metastases, in the order of their frequency, are nodular, infiltrative, effusive, hilar and milary. Metastatic involvements of the pulmonary structures are frequent and roentgen examination should always be made for them. Roentgen treatment with massive high voltage doses may bring about marked benefit and retrogression of the metastases.

### West Virginia Medical Journal, Charleston

28 495 532 (Nov.) 1932

- Heart Disease in West Virginia R J Condry, Elkins—p 485  
Public Health Service, with Especial Reference to Milk Sanitation H S Cumming, Washington D C—p 492  
Pathologic Currents and Asthma O H Bobbitt, Charleston—p 498  
\*Some Problems in Management of Goiter W C Kappes, Huntington—p 501  
Endocarditis E R Logan Omar—p 504  
Hysterectomy Report E B Tucker, Morgantown—p 508  
Symptom Complexes from Nasal Accessory Sinusitis A P Hudgins, Hinton—p 510  
Present Day Hospital Problems B I Golden Elkins—p 514  
Social Insurance Counter Suggestions E H Ochsner, Chicago—p 517

**Management of Goiter**—Despite increasing knowledge of diseases of the thyroid there are still many troublesome problems in diagnosis, prognosis and treatment. Kappes presents some of these and gives suggestions as to their solution in diffuse goiter, toxic (exophthalmic) and nontoxic (colloid), and in nodular goiter, toxic and nontoxic. The author concludes that, in the majority of cases, diffuse nontoxic goiter is nonsurgical but requires long continued observation for evidences of untoward symptoms. The end-results in the diffuse toxic goiters are directly proportional to the correctness of the diagnosis. Conservative (or stage) surgery in the diffuse toxic goiters of long standing and in cases of apathetic thyroidism is of paramount importance, if one is to keep the mortality rate low. Nodular goiter in any patient past adult life is surgical, if one is to prevent permanent cardiac damage, high mortality rates, malignant conditions and substernal projections.

### Wisconsin Medical Journal, Madison

31 746 819 (Nov.) 1932

- Treatment of Burns Report of Two Hundred and Seventy Eight Cases S J Seeger Milwaukee—p 755  
Electric Burns E W Miller, Milwaukee—p 759  
Parenterally Administered Liver Extract in Pernicious Anemia W S Middleton, Madison—p 763  
Transurethral Resection of Prostate Conservative Procedure for Relief of Prostatic Obstruction G H Ewell Madison—p 767  
Syphilis Appraisal of Additions to Treatment of Syphilis During Last Decade M J Reuter Milwaukee—p 768  
Glimpses of Pioneer Wisconsin Health Work H E Dearholt, Milwaukee—p 774  
Medical Economics W G Riopelle, Beaver Dam—p 779

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

2 905 952 (Nov. 19) 1932

- \*Tuberculosis of Larynx and Artificial Sunlight Treatment St C Thomson—p 905  
Radiotherapy of Carcinoma of Uterus with Especial Reference to Roentgen Treatment F Voltz—p 907  
Results of Treatment of Cancer of Cervix Uteri A Lacassagne—p 912  
Surgical Treatment of Carcinoma of Cervix V Bonney—p 914  
B Diphtheriae, Gravis and Mitis H J Parish, Elsie E Whatley and R A O'Brien—p 915  
Bacteria on Fruit J T Smeall—p 917

**Tuberculosis of Larynx**—Thomson states that in thirty-two favorable cases of tuberculosis of the larynx there were no striking evidences of benefit from light treatment, in only two or three some help from it may be claimed. Nor can it be said that healing of laryngeal tuberculosis was hastened or that the course of light treatment in any way rendered subsequent cure by the cautery more rapid or more certain. Quite as good results have been obtained, and just as swiftly, with voice rest, sometimes supplemented with the galvanocautery or artificial pneumothorax, and, in all cases, the sanatorium regimen. The whole picture of tuberculosis is so remarkably changed for the better under sanatorium conditions that many remedies that appear to be beneficial under ordinary hospital or home conditions are found to add nothing to the improvement wrought by hygienic living in unvitiated air. Hence the number of "negative observations" with many new remedies when tried in a sanatorium. Under other conditions it is possible that they may be of help—by suggestion if not otherwise. The constant medical supervision and control available at Midhurst has enabled the author to see the possible drawbacks, and even dangers, of light treatment if not carefully and regularly watched. Since his series was ended in November, 1929, he has continued to try light treatment in well selected cases, and his conclusion still is that, while it may appear to be of help in a few cases, it probably acts only by suggestion, that it is fraught with danger if not scrupulously supervised, and that, on the whole, in patients in a well ordered sanatorium it is no addition to the treatment at present in use.

### Journal of Pathology and Bacteriology, Edinburgh

35 817 996 (Nov.) 1932

- Mouse Pathogenic Bacteria (Pneumococcus, B Influenzae and so on) of Upper Respiratory Tract Their Relation to Acute Infectious Coryza L Hoyle—p 817  
Specific Antibacterial Properties of Penicillin and Potassium Tellurite Incorporating a Method of Demonstrating Some Bacterial Antagonisms A Fleming—p 831  
Hepatic Lesions Associated with Eclampsia and Those Caused by Raising the Intra Abdominal Pressure G W Theobald—p 843  
Lysogenicity as Normal Function of Certain Salmonella Strains F M Burnet—p 851  
Extensive Melanism in Skeleton of Rana Maculata W F Harper—p 865  
Spontaneous Diseases Observed in Six Hundred Monkeys R W Fairbrother and E W Hurst—p 867  
Changes in Testes of Rats Kept on Diet Deficient in Vitamin A Myra M Sampson and V Korenchevsky—p 875  
Phagocytic Function of Leukocytes in Anemia T A Knott and S J Hartfall—p 889  
Case Illustrating Effects of Prolonged Action of Radium Joan M Ross—p 899  
Some Properties of Diphtheria Antitoxin in Serums of Animals of Different Species Mollie Barr—p 913  
Functioning Tumor of Islands of Langerhans W G Barnard—p 929  
Inflammation in Earthworms G R Cameron—p 933

### Lancet, London

2 1039 1090 (Nov. 12) 1932

- Suggestion Hypnotism and the Will W Brown—p 1039  
Surgery of Blood Vessels W Wheeler—p 1042  
\*Orthopedic Treatment in Poliomyelitis in Acute and Subacute Stages A H Todd—p 1044  
\*Observations on Use of Alum Toxoid as Immunizing Agent Against Diphtheria J C Saunders—p 1047

**Orthopedic Treatment of Poliomyelitis**—Todd believes that the actual means of splinting a patient with acute anterior poliomyelitis is of less importance than the observance of correct principles. But in the earliest stage, and especially when pain is a striking feature of the case, plaster of paris is, in his opinion, unequalled. It is invaluable also in cases of trunk paralysis, for by its use plaster "beds" or casts can be made which fit

the patient accurately, provide perfect rest and relaxation with comfort, and prevent deformity from unequal muscular pull. A plaster bed made by a skilled orthopedic surgeon, is a comfortable splint. For the lower limbs the lightest possible splints that are efficient are to be desired. They must hold the paralyzed joints in such a position as to afford the affected muscles rest and relaxation, provided they do that, the less they enclose and constrict the parts the better. Light splints of duralumin are excellent, though more expensive than sheet iron, for many purposes the old-fashioned tin night-splint, made of tin plate and soldered together, has much to recommend it. Web bands and buckles are better than constricting bandages as a means of attaching splints. How long rest and relaxation should be continued before massage and perhaps electrical treatment should be begun is a difficult question. Complete rest should be enforced till all pyrexia, pain, irritability and malaise have disappeared, the patient should be showing signs of the desire to move and must have recovered from the state of contented apathy before any attempt to add stimulative treatment is made. If in doubt it is wiser to wait than to hurry, more harm is done by premature treatment than by the lack of treatment. Probably no muscle that has suffered recognizable paralysis should receive treatment other than relaxation within a month, usually the interval should be longer, and it may be as long as two or three months. Manual massage should be the first method of adjuvant treatment to be added, its object is to stimulate the circulation and maintain the tone of the paralyzed muscles. Electrical stimulation of paralyzed muscles must be carried out with extreme caution in the earlier stages of the disease, anything approaching strong stimulation would do incalculable harm by stretching the damaged structure perhaps irretrievably. Every contraction of a partially paralyzed muscle, whether in response to a voluntary or to an electrical stimulus, must be submaximal. Any attempt to get a contraction at all costs, by using a strong current if need be, is strongly to be deprecated. A patient will not do more than he can of his own free will if subjected to an electrical current he may have no option, for this reason the author much prefers voluntary movements under water if possible, to electrical treatment, in the early stages of convalescence. Even later, when electrical treatment can be used more freely it is necessary to use it with circumspection for another reason it is essential that the stimulus be applied to the paralyzed muscles and vessels only and not to their opponents otherwise deformity will be aggravated. For this reason indiscriminate treatment of a whole limb in an electric bath is usually contraindicated, it is applicable only in those relatively rare cases in which all the muscles of a limb have been equally affected. In the majority of cases it is necessary for the affected muscles to be treated personally by the electrotherapist and in all cases it is vital to use such a current as will stimulate the paralyzed muscles and not their opponents. To use such a strong current in the hope of waking up a much paralyzed muscle that it goes through to the opposing group is to do double harm. Electricity however and massage have no place in the early treatment of acute poliomyelitis at that stage there is one treatment and one only namely rest with relaxation.

**Alum-Toxoid in Diphtheria Immunization.**—Saunders presents observations based on experience with 436 children treated with alum toxoid and over 7000 treated with toxoid-antitoxin. He considers alum-toxoid superior to toxoid-antitoxin in the prevention of diphtheria. It induces immunity more rapidly. In epidemic periods when rapid induction of immunity is essential alum toxoid is the best antigen. When the doses are properly graduated the reactions caused by alum-toxoid are not more severe than those caused by toxoid-antitoxin.

### Medical Journal of Australia, Sydney

529-550 (Oct. 29) 1932

- Throat and Larynx. A. F. Overland—p. 529  
Examination by Inhalation and Intubation. R. J. Silverton—p. 531  
Diphtheria. A. R. Southwood—p. 535  
Acute and Chronic Otitis Media. A. R. Southwood—p. 541

**Intravenous Urography.**—Owen believes the time has come when intravenous urography should be the standard method of examining patients referred to the radiologist

and suspected of having any gross abnormality of the upper part of the urinary tract. The injected contrast medium passing through the kidneys during its elimination clearly outlines these organs and enables their size, form and position to be most accurately determined. Further, since the injected medium is, as a rule, rapidly excreted by normal kidneys, the time of appearance and degree of density of the shadows furnish an indication of renal function. A series of urograms will afford an ocular demonstration of the dynamics of the upper part of the urinary tract. The author stresses that intravenous urography is not intended to displace the cystoscopic method of examination. Each is complementary to the other, one method alone often yielding insufficient information. The intravenous method of examination may be used as a routine prior to cystoscopy and ureteral catheterization. Intravenous urography has proved to be of particular value when, because of pathologic, anatomic or technical reasons, cystoscopy and ureteral catheterization cannot be satisfactorily carried out, for example, in some cases of vesical tuberculosis in the male, in certain cases of enlargement of the prostate, in some cases of stricture of the urethra and of profuse hematuria, and in the occasional case of ureteral obstruction in which the contrast medium cannot be injected beyond the block. It is of great value in children, especially in males. Intravenous urography has been disappointing in the diagnosis of some acute types of renal infections without gross deformity. In cases of early tuberculosis of the kidney and in the intermittent types of hydronephrosis, it is liable to be misleading. Its scope also is definitely limited by the fact that satisfactory urograms are obtainable only when the renal function is good enough to secrete the radiopaque solution in sufficient concentration for the purpose of diagnosis.

**Achlorhydric Anemia.**—Swift points out that one of the causes of pruritus vulvae of so-called neurotic origin is an achlorhydric anemia. The history of the pruritus often dates from a pregnancy. A blood examination should be done in all cases of pruritus vulvae in which no definite cause can be found. In the event of the hemoglobin being low, a test meal should be done for the presence of free hydrochloric acid. Gynecologists and dermatologists see a number of patients with pruritus who have been seen by numerous physicians. The author suggests that this achlorhydric anemia be remembered as a common cause.

### Practitioner, London

120 521-640 (Nov.) 1932

- Some Aspects of Tonsillitis and Tonsillectomy in General Medicine. R. Miller—p. 521  
Treatment of Acute and Chronic Tonsillitis. J. F. O'Malley—p. 531  
Complications of Common Cold as They Affect the Ear, Nose and Throat. A. L. Yates—p. 546  
Adenoids. F. P. Sturm—p. 560  
Prescription of Electric Hearing Aids of Pocket Type. H. M. Wharry—p. 573  
Submucous Resection of Nasal Septum in Children. M. Yearsley—p. 581  
Diagnosis of Carcinoma of Stomach with Especial Reference to Lactic Acid. L. S. P. Davidson and A. Calder—p. 584  
Paraplegia and Malignant Disease in Childhood. F. J. Poynton and R. Lightwood—p. 607  
Prevention of Renal Complications Following Scarlet Fever. B. A. Peters—p. 614  
Modern Treatment of Fractures. N. R. Smith—p. 620

**Complications of Common Cold.**—Yates believes that the common cold is devoid of complications except in the following circumstances. 1 When the discharges are confined within a sinus or within the middle ear by reason of the swelling of the mucous membrane which interferes with drainage. 2 When there is a secondary infection from contact with a person whose nose contains micro organisms that are resistant to the natural destructive powers of the nasal mucus and thus live and multiply within it. 3 When the mucus in the nose is diluted either by nasal douching or by bathing. 4 When the common cold affects a person who is in ill health. The complications of the common cold are found. 1 Within the nasal sinuses diagnosed by the presence of pain and relieved in the early stages by cocainization of the nose and thus effecting drainage and in the later stages by washing out the sinuses with liquid petrolatum. 2 Within the ear acute otitis media is treated by efficient myringotomy (the sooner myringotomy is performed the quicker the recovery). 3 Within the larynx

and bronchi, laryngeal and bronchial complications are treated by sprays of liquid petrolatum, which aid the cilia in conveying the excess of mucus through the trachea and the larynx.

**Carcinoma of Stomach**—A biochemical and quantitative bacteriologic investigation of the gastric contents in eighty cases of cancer of the stomach is presented by Davidson and Calder and compared with a control series of approximately 1,000 test meals from normal persons and from patients suffering from various diseases. From their study the authors conclude that lactic acid has no specific relation to cancer of the stomach, for the following reasons: 1 It belongs to the fermentative type, as shown by chemical and polarimetric investigations and by quantitative bacteriologic methods that reveal a correlation between the amounts of lactic acid and the number of lactobacilli present in the gastric contents. 2 Lactic acid may occur in nonmalignant disease of the stomach and be absent in cases of gastric cancer. 3 Lactic acid may result from extragastric causes and arise in extragastric situations. Lactic acid occurs in from 50 to 70 per cent of gastric cancer cases and in approximately 5 per cent of patients suffering from all other diseases. Lactic acid production depends on the simultaneous occurrence in the stomach of a suitable hydrogen ion concentration and a delay in the gastric emptying time. A combination of these two factors is found ten times as often in cancer of the stomach as in all other gastric diseases. A positive lactic acid test, while not pathognomonic of cancer, is a helpful diagnostic sign. All patients in whom lactic acid can be demonstrated by qualitative tests should be regarded as potential gastric cancer cases until the diagnosis is disproved by careful radiologic investigation and an alternative explanation for the achlorhydria and stasis substituted. The authors discuss the importance of early diagnosis and they express the view that an improvement in this direction can be obtained only by an educational campaign and by the evaluation in proper perspective of the clinical history and the examination of the gastric contents by microscopic, chemical and bacteriologic methods, supported when necessary by the use of the roentgen ray.

### South African Medical Journal, Cape Town

6 683 714 (Nov. 12) 1932

- \*Vitamin A in Treatment of Pneumonia A. J. Orenstein—p. 685
- Some Investigations into Vitamin A Content of Livers of Native Mine Laborers F. W. Fox—p. 689
- \*The Blood Pressure Problem R. Scheffer—p. 690
- Chronic Gastritis L. Mirvish—p. 693

**Vitamin A in Treatment of Pneumonia**—Orenstein used 764 pneumonia cases among male native mine employees as the subject of a therapeutic experiment, 375 of the patients being treated with a highly potent vitamin A preparation and 389 acting as controls. The case mortality, repatriation and discharge rates were almost identical in the two groups. The average length of stay in hospital was also almost identical. The complications and sequelae encountered were practically the same in the two groups, and so were the concurrent diseases. The lung involvement encountered was approximately the same in the two groups. Termination by crisis was somewhat more frequent in the group treated with the vitamin A preparation.

**The Blood Pressure Problem**—Scheffer points out that in old age, as in later middle life, raised blood pressure can almost be considered an advantage. Old people whose blood pressure is high are much more energetic and useful members of the community than those in whom the pressure is low. Old people with blood pressures between 160 and 180 seldom complain, while those with blood pressures of 120 and less are always ailing. Provided the heart is regular, the pulse pressure is good and there is no uremia, the blood pressure will not cause trouble or require treatment. It is not the author's intention to state that in old age the blood pressure is high or ought to be high. As a matter of fact, the formula 100 plus half the age in most normal cases does give the approximate pressure. There are, however, people in whom, at all ages, the pressure is normally high. These people will enjoy perfect health, provided their pressure is not interfered with. They are the people who are easily changed into blood pressure hypochondriacs. They are the people who, in many cases, seem to enjoy "high blood pressure."

### Archives des Maladies de l'Appareil Digestif, Paris

22 937 1048 (Nov.) 1932

- Gallbladder and Cholesterol Absorption or Secretion G. Lévy—p. 937
- \*Essential Perivisceritis of Digestive Tract J. Baumel and G. Roux—p. 956

**Perivisceritis of Digestive Tract**—Under this name Baumel and Roux discuss the anatomoclinical syndrome arising from a modification in the fixation of one or more segments of the digestive tract. It is observed most frequently in persons between the ages of 20 and 35. The chief symptoms of perivisceritis are loss of appetite, heartburn, flatulence after meals, sometimes followed by vomiting (especially in patients with severe pyloric or duodenal adhesions) and pain in the right iliac fossa; these symptoms may be accompanied by constipation or diarrhea. The pain results from the functional activity of the organs, and its location depends on the organs involved. Headache is a frequent symptom. The general symptoms are loss of weight, asthenia and sometimes fever. Physical examination reveals hyperesthesia of the solar plexus and pain in the ceco-appendicular region. In localized perivisceritis, the general symptoms are less severe. If the lesion is ceco-appendicular, the digestive disturbances are chiefly gastric. The cecum is distinctly palpable and the zone of the appendix is painful. In the appendiculoduodenal form the gastric symptoms are accentuated, there is pain at the pyloroduodenobiliary junction as well as in the region of the appendix. In the rare, purely duodenal form there is a pyloroduodenobiliary zone of pain in addition to the hyperesthesia of the solar plexus found in all forms. Roentgenography of the digestive tract must supplement clinical examination. The stomach usually remains mobile, but the pylorus often is immobile. Duodenal lesions predominate in the second segment and the affected segment is practically immobile, the bulb is usually deformed. Ileac stasis usually occurs only in the last loops of the ileum, and barium is sometimes found there twelve hours after ingestion. It requires eight hours or more for the cecum to become opaque, all or a part of it may be almost immobile. The appendix is usually not visible. The syndrome is most often confused with chronic appendicitis. The chronically inflamed appendix is always accompanied by a defense reaction of the corresponding muscular plane, which contrasts strongly with the marked flaccidity of the right iliac wall and flank observed in perivisceritis. The diffuse pain of the latter is in contrast with the fixed, localized pain of chronic appendicitis. If the perivisceral reactions predominate in the duodenal region, cholecystography, duodenal tubage and serial roentgenography may be necessary to rule out perivisceral reactions of biliary or ulcerous origin. Treatment should be medical at the outset and should be aimed at the prevention and cure of adhesions, and improvement of the general condition and the intestinal functions. For adhesions the authors advise serial injections of a 4 per cent solution of benzyl cinnamic ether. Heliotherapy and diathermy may be used simultaneously. Surgical intervention is indicated only in cases presenting acute intestinal occlusion at the outset and in cases which fail to respond to medical therapy and in which general deficiency of the organism impends. Medical therapy should be resumed after intervention, and cure should not be expected in less than six months.

### Journal de Chirurgie, Paris

40 801 979 (Dec.) 1932

- Deltopectoral Approach to Shoulder F. M. Cadenat—p. 801
- Surgical Study of Severe Gastric Hemorrhages Due to Ulcer P. Mallet Guy and R. Peycelon—p. 809
- \*Acute Abdominal Syndrome in Course of Purpura J. Seneque and J. Gosset—p. 823

**Acute Abdominal Syndrome in Purpura**—Seneque and Gosset discuss the indications for surgical intervention in the acute abdominal syndrome of purpura, on the basis of 145 cases collected from the literature. The syndrome consists of pain, vomiting and melena. It usually appears in rheumatoid purpura and is most common in childhood and adolescence. It is usually preceded by a cutaneous purpuric eruption, but the latter may appear simultaneously or afterward or be lacking. Anatomically the syndrome is characterized by purpuric spots on the parietal peritoneum or the subserous wall of the intestine, appearing singly or merging to form a hematoma. Usually the hemorrhages are spontaneously resorbed, but some-



times the peri-intestinal hematoma produces an intussusception which may evolve toward perforation, or it may undergo necrosis resulting in perforation. In the absence of the cutaneous purpuric eruption, diagnosis of the typical uncomplicated abdominal syndrome is impossible. If the pain predominates in the periumbilical region and the right ileac fossa and the stools are not bloody, appendicitis is simulated. The syndrome may simulate an intussusception, especially if the peri-intestinal hematoma forms a palpable sausage-like swelling. Exploratory laparotomy may rule out appendicitis, intussusception or necrosis at the time of intervention but is no safeguard against the development of invagination or perforation at a later stage or during one of the usual recurrences of this syndrome. Among the cases studied, there were 110 with simple intussusception, ten with the appendicular type of syndrome, sixteen with intestinal invagination and nine with gastric or intestinal perforation. The mortality in the forty operative cases was 25 per cent, in the 105 cases in which operation was not performed, 121 per cent. Seven of thirteen cases of invagination were cured by intervention but four patients with simple exudate died following intervention. The authors think it is better to intervene than to let a gangrenous appendicitis, an invagination or a perforation pass unnoticed, but it is important to reduce the purely exploratory laparotomies as much as possible by making use of roentgenography of the intestine with a barium sulphate enema, as, aside from perforation, it is the fear of intussusception that determines intervention.

### Paris Medical

22 457 496 (Dec. 3) 1932

- Therapeutics in 1932 P. Harvier—p 457  
 Treatment of Benign Lymphogranuloma of Groin M. Pinard—p 470  
 Gold Therapy in Tuberculous Rheumatism A. Pellé—p 472  
 \*Nitritoid Crises Following Injections of Bismuth E. Bertin and A. Breton—p 476  
 Hematologic Controls in Rheumatic Patients Treated with Gold. F. Coste and J. Bourderon—p 478  
 Treatment of Osteomalacia with Viosterol J. Decourt and S. Kaplan—p 485  
 Treatment of Lipoid Nephrosis M. Bariéty—p 491

**Nitritoid Crises Following Injections of Bismuth Hydroxide**—Bertin and Breton state that sensitivity to bismuth compounds which may manifest itself clinically by all the minor accidents of anaphylaxis, exceptionally manifests itself by a nitritoid crisis, similar to that of arsphenamine intolerance. While this crisis occurs so rarely that in practice it may be considered nonexistent, the authors report a characteristic case merely as a medical curiosity, also one case of grip due to bismuth, with attacks of coughing. The production of the nitritoid crisis manifests itself about twenty minutes after the injection of the bismuth hydroxide by an attack of congestion with generalized erythema, a sensation of retrosternal bar and a continuous, short dry cough. The temperature rises to 38 C (100.4 F). In the grave forms there is relaxation of the sphincter muscles. The crisis recedes rapidly with the injection of epinephrine-morphine, or subsides spontaneously.

**Treatment of Osteomalacia with Viosterol**—Decourt and Kaplan state that the results obtained with viosterol therapy in osteomalacia up to the present time have been excellent and constant. From their own experience they report the beneficial results obtained in three cases of painful spinal osteoporosis which they regard as larval forms of osteomalacia because of their clinical roentgenologic and serologic character and response to viosterol. The cases concern three women between the ages of 60 and 70. The oral administration of from 3,000 to 6,000 rat units either alone or associated with calcium chloride resulted in a total disappearance of the pain in the bones and improvement in the general condition within a few weeks. Renewed roentgenography practiced in one case showed a recalcification. A renewed serologic examination in a case with hypercalcemia showed a normal blood calcium content. The authors think that the activity of viosterol renders a precise dosage unnecessary. Their own observations show that from 3,000 to 6,000 rat units may be administered for a long period, even to aged patients without untoward effects if the medication is interrupted from time to time. Harvier advises omitting it for a few days a week to avoid calcium intoxication. The strong side effects could be reduced when it is only a question of achieving a result already achieved. It is advisable to look for a calcium level in the blood and in the urine such as albuminuria,

cylindruria, hyperazotemia, hypercalcemia and arterial calcification. The authors do not think that osteomalacia is purely an avitaminosis, but rather that it may result from several factors, such as insufficient calcium intake, vitamin deficiency, endocrine disturbances, disturbances of the chemico-physical equilibrium of the blood, and so on. Therefore administration of viosterol should be supplemented by administration of calcium, a well balanced diet should be given and the digestive function should be carefully controlled.

### Schweizerische medizinische Wochenschrift, Basel

62 1093 1116 (Nov. 26) 1932

- Multiple Sclerosis Formerly and Now R. Bing—p 1093  
 Legal Evaluation of Multiple Sclerosis O. Veraguth—p 1099  
 \*Renal Hematuria. R. Allemann—p 1104

**Renal Hematuria**—Allemann points out that hematuria frequently develops suddenly without prodromal symptoms, and yet it may be the symptom of a serious disorder. If it continues for days or even weeks, it may lead to severe secondary anemia, but even the intermittent hematuria may be the symptom of a severe disorder. The author states that in case of renal hematuria one should not be satisfied with such diagnoses as arteriosclerotic hemorrhage, idiopathic hemorrhage, essential hematuria or angioneurotic hemorrhage. He admits that hypertension may be complicated by hematuria, just as it may be accompanied by hemorrhages in other organs, such as the brain, nose and retina, but he thinks nevertheless that the diagnosis of hypertension hematuria is as a rule only a probability diagnosis. With increasing clinical experience one frequently finds a renal tumor to be the cause. The author thinks that hematuria, even as the only symptom, necessitates the employment of all modern diagnostic aids, because he has observed that tumors which were treated immediately after the onset of the hematuria had a much more favorable prognosis than those in which the tumor was not recognized until after pain had set in. He cites reports from the literature which indicate that malignant tumors of the kidney may present a varying symptomatology, for instance of hepatic cirrhosis and cardiac myodegeneration or of aplastic anemia. After a short discussion of the traumatic origin of renal hematuria, he points out that hematuria may be an early symptom of renal tuberculosis. He discusses congenital cystic kidney as the cause of renal hemorrhages. The author considers ignipuncture combined with nephropexy as the most effective treatment of cystic kidney. He thinks that hematuria is a rare complication of appendicitis and that calculi of the renal pelvis or of the ureters are likewise only rarely the cause of hematuria. Many cases that are diagnosed as essential, idiopathic or angioneurotic hematuria, or as hematuria from an anatomically unchanged kidney, are frequently discovered to be caused by a focal glomerular nephritis. The author concludes with a discussion of the renal hemorrhages caused by hydronephrosis.

### Boll. d. Istituto Sieroterapico Milanese, Milan

11 661 748 (Oct.) 1932

- Adaptation of Bacteriophage to Horse Serum A. Taddei—p 661  
 Histologic Alterations Caused by Living and Dead Tubercle Bacilli Luisa Pozzi—p 677  
 Allergy in Staphylococcal Infections Treated with Autovaccines P. Costantini—p 691  
 Experimental Culture of Tubercle Bacilli from Blood of Patients with Skin Diseases, According to Lowenstein's Method G. Cottini—p 703  
 Alleged Antiaaphylactic Action of Cholesterol R. Severi—p 719  
 Phenol in Serodiagnosis of Syphilis V. Nicoletti—p 729

**Phenol in Serodiagnosis of Syphilis**—Nicoletti states that pure phenol or its alcoholic solution in the proportion of one to fifty, in nonanticomplementary concentrations, increases only in a negligible manner the anticomplementary power of lipoidal antigens. In the Wassermann reaction it is observed that doses of antigen, equal to doses of serum which normally do not give positive reactions, give them in the presence of phenol. Similarly, with the same quantity of antigen, dilutions of serum that normally are incapable of producing a positive reaction produce it in the presence of phenol. This reinforcing effect of phenol is observed in the first period or the reaction (period of fixation). The greater sensitivity which phenol confers on the Wassermann reaction is specific as demonstrated by the observations in 900 clinically recorded serums, both with and without the use of phenol. The reinforcing effect of phenol is concerned with the zonal precipitation according to Kodoma

and is not concerned with Müller's conglobation reaction II. The author maintains that nothing definite can be said about the mechanism of the reinforcing effect of phenol, all the theories presented on the subject up to the present being unacceptable. The author attributes to phenol a catalytic action in reactions between antigens, lipoids and related antibodies, these are perhaps secondary effects, less important and less specific. The author concludes that by observing suitable technical measures, phenol can be used to advantage in the Wassermann reaction.

### Gazzeta degli Ospedali e delle Cliniche, Milan

53 1537 1568 (Dec 4) 1932

Heart Fatigue in Relation to Occupation G Mauro—p 1537

\*New Method of Investigation of Patellar Reflex G Carboognin—p 1540

**New Method of Investigation of Patellar Reflex**—Carboognin reviews the literature and the methods of eliciting the patellar tendon reflex. He advocates a new technic wherein the patients are examined while somnolent during the rest hour of the afternoon or at night. The author's objective is to have complete relaxation of the muscles and a twilight consciousness before percussion. Consequently he allows his patients first of all to fall sound asleep, after having warned them that on being awakened they have to relax and simulate sleep, if complete somnolence is not possible. The experiments were made from July to September, during which time the patients slept with little covering and consequently felt no arousing sensation of cold on being awakened, or in pajamas with the trousers pulled back over the knee. The patients slept in the dorsal and the lateral recumbent positions. In the former the author gently placed the left hand below the popliteal region and raised it, after the patient awakened and fell into somnolence, the author percussed the tendon. In the lateral position the legs were crossed, the author raised the overlapping leg to a suitable angle and, when the patient fell into somnolence, he percussed the tendon. The author compares the results of the intensity of the reflex action obtained in conscious patients with those obtained in somnolent patients. In the latter he has always found greater intensity and regularity of the reflex, and never diminution.

### Archivos Arg de Enf del Ap Digest, Buenos Aires

S 5 143 (Oct Nov) 1932

Stenosis of Third Portion of Duodenum Caused by Lymphosarcoma T Castellano, J M Allende, C Verde and C Nuñez—p 5

Clinical and Experimental Study on Painful Abdominal Crisis of Anaphylactic Nature P Alessandrini and P M Re—p 19

Extrarenal Hyperazotemia Associated with Hypochloremia in Course of Acute Diseases of Liver B Varela Fuentes and P Rubino—p 31

Results of Surgical Treatment of Cancer of the Stomach R E Donovan and A Cibils Aguirre—p 55

\*Treatment of Coccygodynia A Yodice—p 73

Profuse Hemorrhage from Duodenal Ulcer Case R E Donovan—p 83

**Treatment of Coccygodynia**—Yodice says that coccygodynia is not frequently observed. Surgical interventions and alcohol injections of the sympathetic nerves have been used in the last few years to relieve the pain. The author reports satisfactory results in two cases from the use of injections of a 5 per cent solution of quinine and urea. The injections are performed as follows. The patient is placed in the genupectoral position. The skin of the coccygeal region is disinfected with alcohol and tincture of iodine. With the forefinger introduced in the rectum and the thumb placed externally on the coccygeal region, the point in which the pain is more severe is located. From 3 to 5 cc of the solution is slowly injected into this point. The injection is made from the outside (not through the anus) with a needle 6 or 8 cm long, so as to reach the coccyx. The injection is repeated after five, six or seven days. The injections are given at different points of the coccygeal region in order to bring the entire coccyx in direct contact with the solution. During the injection the patient complains of intense pain, which disappears after a few minutes. The pain of the syndrome abates and disappears entirely after three or four injections. No recurrence of the pain is observed after the treatment. The author believes that the method is better than methods previously reported. It gives just as satisfactory results as those given by alcohol injections of the sympathetic nerves, without having the disadvantages of the latter method. The injection of quinine and urea solution is harmless, and no local inflammatory reaction follows the injection.

### Archiv fur Gynakologie, Berlin

151 441 709 (Nov 22) 1932

Spatial Visualization in Obstetrics H Sellheim—p 441

\*Pernicious Anemia of Pregnancy M Bolaffio—p 465

Reconstruction of Roentgen Pictures, Means for Scientific Knowledge and Didactic Progress W Liepmann—p 534

Significance of Roentgenologic Examination of Sella Turcica for Evaluation of Disturbances in Sexual Functions of Women O Bokelmann—p 546

\*Changes in Pancreas During Pregnancy in Human Beings and Animals. K Rosenlocher—p 567

Cysts in Vaginal Wall of Three Fetuses Aged from 3 to 5 Months R Meyer—p 576

Essential Errors in Determination of Size of Conjugata Vera by Means of Roentgenography of Pelvis in Profile F A Wahl—p 587

Mechanisms of Sacro-Iliac Articulation and Its Significance in Operations for Widening of Pelvis F A Wahl—p 593

Lymphocystofibroma of Uterus H Dworzak—p 601

\*Action of Radium on Vital Organs (Heart, Lungs, Liver), on Structure and Function of Female Genitalia and on Offspring J Granzow—p 612

Influence of Ultraviolet Rays on Cholesterol Metabolism R Hubert—p 681

Hormonal Sterilization of Women Action of Prolan on Ovaries A Mandelstamm and W K Tschaukowsky—p 686

Is Capacity to Decompose Exogenous Creatine a Specific Reaction of Sexually Mature Organism? O Mühlbock and C Kaufmann—p 706

**Pernicious Anemia of Pregnancy**—Bolaffio points out that in the German literature a relatively small number of cases of pernicious anemia of pregnancy have been reported, although he himself has seen more than forty cases. However, he reports only the thirty-seven cases in which he actually made hematologic observations. The majority of these cases were reported in the Italian literature in 1924, 1926 and 1928, but he reviews briefly the histories of all these cases and then presents a general discussion of their clinical aspects. The hematologic examination revealed an enormous decrease in the number of erythrocytes, running to less than one million in many cases. The color index was increased in the majority of cases. In a few it was less than 1 at the first test, but it generally increased with the further decrease in the number of erythrocytes. The author emphasizes, however, that in the anemia of pregnancy the high color index is not as early a symptom as is usually the case in cryptogenic pernicious anemia occurring outside of pregnancy. He discusses the course, etiology, prognosis and treatment of the pernicious anemia of pregnancy, and he stresses the following points. In pregnant women, a lability of the blood status may develop, which, in addition to changes in the physicochemical behavior and composition of the plasma, becomes manifest in oligocythemia and oligochromemia. The basis of this is a constitutional predisposition of the bone marrow and some pathologic conditions such as heart diseases, malaria, syphilis and acute infections, but particularly a certain inertia of the incertion of the stomach that stimulates blood formation, while the disintegration of the blood is increased as a result of the placental metabolism. Pernicious anemia of pregnancy is the extreme result of this condition, in which the maternal as well as the fetal hematopoiesis is characterized by a flooding out of many young and embryonal erythrocytes, but the fetal blood formula differs from the maternal by the absence of megaloblasts and by the normal or superior number of erythrocytes compared to the greatly decreased number of erythrocytes in the mother's blood. In its nature, that is, in the deficiency of the hormone that stimulates blood formation, pernicious anemia of pregnancy is identical with cryptogenic pernicious anemia. It differs from the latter only in the site of its primary cause, which is probably the placenta, and occasionally in unessential hematologic characteristics. The increased hemolysis of pernicious anemia of pregnancy can be arrested and the decreased and pathologic blood regeneration can be led into normal channels by liver therapy, just as can be done in the cryptogenic pernicious anemia. Liver therapy is the only measure that has made it possible to bring the pregnancy to term under these conditions. Interruption of pregnancy can be resorted to, and this measure is advisable because there is usually a considerable exacerbation during the puerperium, but cases that appear hopeless may sometimes be saved by large blood transfusions. Anemia may recur in subsequent pregnancies, but the relative rarity of a recurrence and the efficacy of modern therapy make sterilization unnecessary.

**Changes in Pancreas During Pregnancy**—On the basis of histologic studies on the pancreas of nongravid and of gravid animals, and of women who died during or shortly after a

pregnancy, Rosenloecher states that the islands of Langerhans increase and enlarge during pregnancy. The number of the insular epithelia also increases. The parenchyma shows changes of the epithelia and their nuclei and an increase in the zymogen granules. Thus, in the pancreas during pregnancy considerable changes occur in the insular apparatus as well as in the parenchyma. These histologic studies seem to indicate also that the increased and maximal functional activity takes place during the middle period and toward the end of gestation and then, perhaps before parturition, gradually begins to decrease again.

**Action of Radium.**—Granzow reports the effect of radium irradiation on the heart. He made experiments on eighty-nine female guinea-pigs, some of which were pregnant. In some animals all the rays of the concentrated radium preparation were applied to the precordial region, while in others they were largely screened off by lead protectors. The average survival of the animals was 140 days. Anatomic changes that could be traced to the action of the radium rays were demonstrable in the heart, lungs and liver. The impairment of the heart consists in a degeneration of the myocardium, and frequently there is also a pericarditis. The lungs show degeneration of the respiratory epithelium, the bronchi, the vessels, the connective tissue and the pleura. Moreover, the lung is involved by the disturbance of the cardiac circulation and by inflammatory complications. The liver shows necrosis of the parenchyma, vascular impairment and also the effects of the disturbance of the cardiac circulation. The spleen presents no direct results due to the circulatory upset but occasionally there are signs of engorgement of cardiac origin. The described injuries of the organs are largely independent of the radium doses. Moreover filtration of the radium preparation and an existing gestation have no influence on the development of the injuries. The severity of the injury of the pectoral muscle of the left side (to which the rays were always applied) does not run parallel with the myocardial impairment. Anatomic changes in the ovaries, namely, destruction of ova and of follicles and diminution in their number, were noted in two thirds of the animals. These changes are not specific for radium, and primary as well as secondary follicles were destroyed. Presence or absence of gravidity and dosage and filtration of the radium rays had no influence on the severity of the ovarian disturbances. The functional impairment of the genitals often became manifest in sterility and, in case of conception, abortion followed in two thirds of the cases. The full term offspring showed increased mortality but abnormalities or deformities were not observed in the offspring.

### Deutsche medizinische Wochenschrift, Berlin

58 1827 1868 (Nov 18) 1932

- Psychiatric Experiences on Interruption of Pregnancy and Sterilization. H. W. Maier —p. 1827  
Late of Diabetic Patients. H. E. Buttner —p. 1832  
Syphilis of Aorta and of Aortic Valves. G. Katz and M. Bodenstein. —p. 1833  
Abnormal Mobility of Knee in Children. M. Böhm —p. 1835  
Local Vaccination in Gonorrheal Diseases. E. Langer and A. Proppe —p. 1837  
Technic of Blood Transfusion. E. Unger —p. 1838

**Interruption of Pregnancy and Sterilization.**—Maier's report is based on the experiences gathered in the course of twenty-five years by the psychiatric clinic in Zurich. Summing up these experiences, he says in regard to the interruption of pregnancy that for medical, ethical and psychologic reasons the legal protection of developing life cannot be dispensed with. In exceptional cases interruption may be resorted to in compliance with the wish of the pregnant woman (or her guardian) if the completion of the pregnancy would endanger the life of the woman or would permanently impair her health (medical indication) or if the impregnation was a criminal act that is, when it was done without the consent of the woman as for instance in rape or young girls still of the protected age or of idiots and mental defectives. In determining the medical indication one should take into consideration not only a definitely defined disease condition but also the entire mental and psychic constitution of the woman. The severe effects which are rarely decisive in determining the advisability of a forced abortion in some rare cases, however, must also be taken into account together with other factors. The results of the interruption of pregnancy are an interruption

of pregnancy, but its influence on the health and particularly on the psyche of the patient should be given due weight when the resistance of a gravida with heart disease or with tuberculosis is evaluated. Whenever subsequent pregnancies would involve the same danger as the existing one, sterilization should be combined with the abortion. In regard to sterilization, the author states that removal of the generative glands is indicated only in rare cases of men who have a record of incorrigible sexual criminality. The intervention should be made only on the basis of a psychiatric decision given after observation in an institution. Sterilization by ligation of the excretory ducts of the sex glands is indicated in certain physical ailments and in certain mental defects, particularly for eugenic reasons, provided the expert testimony of two physicians maintains that a defective progeny is likely. The legal regulations should be such as to exclude legal action if there are sufficient indications for the intervention. The author considers as inadvisable legal regulations that make sterilization obligatory.

**Local Vaccination in Gonorrheal Diseases.**—According to Langer and Proppe, the complications of gonorrhea rarely yield to local therapy alone and for this reason treatment with gonococcal vaccines has been resorted to. As a rule the vaccines were introduced intravenously or subcutaneously, but recently the idea has gained ground to administer the vaccine near the disease focus. The authors employed this local vaccination in fifty-one women, twenty-one of whom are still receiving treatment. Vaccination of the portio vaginalis was resorted to in chronic cases in which gonococci persisted in spite of local therapy and subcutaneous vaccination. The injections are begun with small doses of from 0.1 to 0.2 cc, yet even these doses sometimes cause severe reactions, and for this reason ambulatory treatment cannot be given. The injection is repeated after the reactions have subsided, that is, every third or fourth day. Local vaccination was done also in gonorrheal disorders of the vulvovaginal glands and in rectal gonorrhea. In the case of the vulvovaginal glands the reaction is less severe and from 0.2 to 0.3 cc. of the vaccine may be administered. On the basis of their observations, the authors conclude that local vaccination is superior to intravenous or subcutaneous injections of gonococcal vaccine.

### Deutsches Archiv für klinische Medizin, Berlin

174 221 340 (Nov 22) 1932

- \*Seminoma. Clinical and Histologic Aspects. H. Magendantz, F. Strieck and E. Müller —p. 221  
Hereditary Osteospathyrosis. R. Cronental —p. 228  
\*Clinical Aspects of Gonorrheal Disorders of Joints. R. Gantenberg and A. Sandmann —p. 238  
Electrocardiographic Studies in Acute Infectious Diseases. F. S. P. van Buchem and L. P. Daniels. —p. 250  
Electrocardiographic Observations in Acute Rheumatism. P. Lukomski. —p. 268  
Labile Blood Pressure and Sympathetic Nervous System. M. Werner —p. 289  
Mottling and Its Causes in Pulmonary Roentgen Picture Made While Person is Standing on Head. F. Kuhlmann —p. 300  
Treatment of Psychotic Conditions During Hypertension. E. Gripwall —p. 305  
\*Cholesterol Content of Blood in Course of True Nephrosis. Its Relation to Development of Edema. F. Port —p. 312

**Seminoma.**—Magendantz and his associates report the clinical histories and the histologic aspects of two patients with seminoma. The clinical report is noteworthy because, in the beginning stage, the seminomas could be influenced by irradiation while later the ray susceptibility disappeared entirely. The operative removal of a testicular tumor should be followed by irradiation, and the patients should be examined again from time to time. Histologic examination revealed that the seminoma metastases are large celled, epithelial tumors usually of alveolar structure and that it is probable that they are derived from the sperm-forming testicular epithelium.

**Gonorrheal Disorders of Joints.**—Gantenberg and Sandmann report their observations in ten cases of gonorrheal arthritis. They found that a constitutional predisposition is involved in gonorrheal arthritis just as in nongonorrheal articular disturbances, that is, there may be a predisposition for infections of the upper air passages and of the lymphatic ring of the pharynx, and a lymphatic constitution, asthma or tuberculosis. It is pointed out that a nonspecific infection of the pharyngeal lymphatic ring or of the upper air passages is

probably in many instances a factor that prepares the way for the gonorrheal arthritis. In the majority of cases the gonorrheal arthritis begins as a polyarticular disorder, and the authors think that the older theories, which considered the monarticular site as a differential diagnostic factor, are no longer tenable. The clinical, the anatomopathologic and the roentgenologic aspects reveal certain typical stages of gonorrheal arthritis, which develop consecutively in the monarticular as well as in the polyarticular forms. The treatment of gonorrheal arthritis should always be begun with a vigorous salicylate therapy. Treatment with gonococcic vaccine is the method of choice, but good results have been obtained with intravenous injection of colloidal silver preparations. Of the local treatments of the joints, Bier's stasis is the most effective and, after the severe, acute manifestations have subsided, paraffin packs can be tried.

**Cholesterol Content in Nephrosis**—Port demonstrates that an increase in the cholesterol content of the blood is a cardinal symptom of true nephrosis and that it is present in all stages. The increase does not subside until after complete cure, and even then the blood cholesterol is still increased occasionally. The cholesterol content shows considerable fluctuations in the course of the nephrosis; a decrease indicates improvement and an increase signifies exacerbation. There is a certain, although not an exact, parallelism between the cholesterol content of the blood and the severity of the edemas. The cholesterol content has to be relatively high (from 400 to 500 mg per hundred cubic centimeters) before edema becomes manifest. If the cholesterol content is below this level, only latent edemas develop. The increase in the cholesterol content of the blood and the edemas have probably the same cause and true nephrosis is a systemic disorder. In edemas of cardiac origin the blood cholesterol is not increased, and this indicates a different pathogenesis for nephrotic and cardiac edemas.

### Klinische Wochenschrift, Berlin

11 1937 1976 (Nov 19) 1932

- Experimental Foundations and Results of Regeneration Theory of Tumor Formation B. Fischer-Wasels—p 1937
- Muscular Cycle of Human Uterus G. K. F. Schultze—p 1942
- Influence of Anions of Hofmeister's Series on Diuresis W. Moraczewski, S. Grzycki and E. Hamerski—p 1945
- Action of Epinephrine on Lactic Acid in Blood J. A. Collazo and J. Puyal—p 1947
- \*Demonstration of Tubercle Bacilli in Circulating Blood A. Aven—p 1949
- \*Demonstration of Methemoglobinemia by Intradermal Injection of Histamine W. Feureisen and O. Klein—p 1952
- Striking Localization of Parasites in Lung of Monkey Resemblance to Tuberculous Diseases in Lung of Human Beings P. Schmidt-Weyland—p 1952
- Artificially Produced Tumors of Bladder S. Perlmann and W. Staehler—p 1955
- Compensation in Drug Addiction S. Hirsch—p 1956
- Criticism of Determination of Iodine Content of Blood W. Mobius—p 1959
- Changes in Protein and Water Economy During Rarefaction of Air Modification by Administration of Carbohydrates H. Elias and H. Kaunitz—p 1959
- Genesis of Death in Status Thymicolymphaticus G. L. Waldbott—p 1960
- Group Specific Differentiation of Placental Organs E. Witebsky and H. Reich—p 1960

**Tubercle Bacilli in Circulating Blood**—Aven calls attention to the discrepancies in the results of the culture of tubercle bacilli from the blood obtained by Lowenstein and by others, and states that in his own studies on this problem he likewise noted differences. In progressive experimental tuberculosis in guinea-pigs, the blood culture does not even reveal an intermittent bacillemia, much less a continuous one, and the author consequently rejects the occurrence of a permanent bacillemia in experimental tuberculosis in guinea-pigs. Tests on the blood of human beings with tuberculosis as well as with other diseases, in which Lowenstein frequently obtained positive results with his blood culture method, gave negative results, that is, the tubercle bacillus was not detectable in the circulating blood. Even in a case of generalized tuberculosis, neither intermittent nor permanent bacillemia was demonstrable. In a small number of surgically removed tonsils, the cultural demonstration of tubercle bacilli was likewise impossible, although Lowenstein had reported positive results in tests on tonsils. The author thinks that the difference between

Lowenstein's results and those of other authors cannot be ascribed entirely to mistakes in the technic or to eventual differences in the condition of the nutrient medium, the more so since the nutrient medium prescribed by Löwenstein is excellently suited for the culture of the tubercle bacillus although it does not surpass some other culture mediums (Petragani) that are employed in laboratories. The author, in conformity with the majority of other investigators, rejects as at least too premature the view that this method of culture of the tubercle bacillus from the blood is of the same significance for the clinic as, for instance, the Wassermann reaction.

**Demonstration of Methemoglobinemia**—Feureisen and Klein point out that the various factors which influence the permeability of the capillary wall also produce an abnormal permeability of the capillaries for pigments. It has been found that this permeability for pigments can be utilized for diagnostic purposes, particularly with the aid of histamine. Since former investigations had shown that intradermal injection of histamine reveals even a slight increase in the bilirubin content of the blood, the authors reasoned that the presence or increase of other derivatives of the blood pigment should likewise be demonstrable by means of the intradermal injection of histamine. They proved this in a case of methemoglobinemia resulting from poisoning with potassium chlorate. The wheal produced by intradermal injection of histamine became dark reddish brown, almost black, within a few minutes, and spectroscopic examination of the pigment in the wheal revealed that it was methemoglobin. Under the influence of continuous drop infusion the methemoglobinemia receded again. The authors consider this method of demonstrating methemoglobinemia by the histamine wheal particularly helpful in cases in which anuria has already set in and in which the demonstration of methemoglobin in the urine is not possible.

### Munchener medizinische Wochenschrift, Munich

70 1905 1946 (Nov 25) 1932

- After Treatment of Carcinoma in Gynecology F. von Mikulicz—p 1905
- Ectoscopy in Abdominal Diseases B. Thom—p 1909
- Food Poisoning with Ergot (Ergotism) E. Leschke—p 1912
- Cerebral Apoplexy W. Schultz—p 1915
- \*Allergic Asthmatic Bronchitis as Early Symptom of Infiltrative Pulmonary Tuberculosis C. Pohlmann—p 1916
- Culture of Tubercle Bacilli from Blood According to Löwenstein A. Dimitza and H. Gutscher—p 1917
- Gastro Enteritis and Its Sequelae K. Gutzeit—p 1920
- \*Modification of Chronic Arthritis and of Spondylitis Deformans by Fever Therapy K. Horn—p 1922
- Experiences with Silicic Acid Chlorophyll Therapy in Patients with Pulmonary Tuberculosis Reichelt—p 1924
- Influence of Long Wave Length Irradiation on Sexual Region Axmann—p 1925
- How to Seal Tubes for Shipping Specimens of Blood or Cerebrospinal Fluid for Wassermann Reaction F. Koch—p 1925

**Allergic Asthmatic Bronchitis as Symptom of Tuberculosis**—Pohlmann states that he observed a number of tuberculous infiltrates that at first showed the symptoms of pure although mild forms of bronchial asthma or of a spastic asthmatic bronchitis. The anamnesis of these patients did not reveal asthma or other allergic disturbances in themselves or in their families and, during the further course of the tuberculosis, they were free from asthmatic disorders. The author considers this ample proof that in these patients the asthmatic bronchitis did not accidentally concur with the tuberculous pulmonary infiltration. After giving the clinical histories of three patients, he states that allergic asthmatic conditions may be produced by a tuberculous early infiltrate as well as by infiltrative exacerbations around old tuberculous foci. The well known difficulties in the physical diagnosis of early infiltrates are intensified in these asthmatic manifestations by the pulmonary emphysema, which makes demonstration of dense foci by percussion almost impossible even for the experienced examiner. It is advisable to verify the erythrocyte sedimentation speed in every case of asthmatic bronchitis, because in the patient with true asthma the sedimentation speed is generally much retarded, so that a normal sedimentation speed generally indicates other disturbances. If the sedimentation speed is increased, the patient with asthmatic bronchitis should be subjected to roentgenoscopy and the sputum examined. The recognition of these forms of asthmatic bronchitis as early symptoms of an acute infiltrative pulmonary tuberculosis is of significance not only because the tuberculous infiltrate may

require collapse therapy but also because the treatment directed against spastic bronchitis alone (potassium iodide) may exert an unfavorable influence on the tuberculosis

**Fever Therapy of Chronic Arthritis and of Spondylitis Deformans**—Horn employed a preparation consisting of fever-inducing substances from nonpathogenic bacteria. Fever therapy in chronic nongonorrheal arthritis and in spondylitis deformans (1) changes the chronic inflammatory processes of the joints into acute ones with a better healing tendency as a result of the acidosis produced by it, (2) aids and stimulates the natural defense mechanisms of the organism by stimulating the bone marrow, and (3) produces a slight flooding out of leukocytes as the essential defense mechanism of the organism. The results obtained by the author with fever therapy are shown in the description of five cases. Two of the patients had spondylitis deformans, one had a chronic inflammation of the small vertebral joints, another had a primary chronic progressive rheumatic polyarthritis of the elbow and shoulder joints, and the other had a secondary chronic rheumatic polyarthritis of the proximal joints of the fingers and of the wrist joints. The therapeutic action of fever is proved by the fact that this was the only treatment at the time and that these cases had been refractory to the usual therapeutic measures. The severe ankylosis of the vertebral joints persisted of course after the fever therapy, but the pains disappeared and a patient who for months had been bedfast was again able to walk. In the other cases the pains likewise disappeared and the motility of the joints improved greatly.

#### Virchows Archiv f path Anat. u Physiol, Berlin

287:1 276 (Nov 19) 1932 Partial Index

- Apparatus for Preparing Specimens for Museum S Mahrburg—p 1  
Production of Deformities in Bird Embryos by Centrifugation of Eggs V Papilian and A Nana—p 5  
Transposition of Large Vessels Case L Kettler—p 10  
So-Called Plant Cancer and Its Metastases Comparison with Animal Tumors H Hamdi—p 29  
Pathogenesis of Ovarian Cancers of Especial Structure Alice Blau—p 34  
Myoblastic Tumors (Myoblastic Myomas Abrikossoff) R Meyer—p 55  
Metastasizing Angiosarcoma H Beitzke—p 82  
Chorio-Epithelioma During Pregnancy with Tearing of Uterus E Stockl—p 90  
Comparative Studies on Cancer Cells and Plasma Cells G Scherber—p 109  
Radiothorium and Pathologically Changed Tissues G Joannovic D K Jovanovic and N Chahovitch—p 126  
Thorium Demonstration in Tissues W Gerlach—p 135  
Changes on Palatine Tonsils in Course of General Infection Hematogenic Tonsillitis C Krauspe—p 139

**Chorio-Epithelioma During Pregnancy**—After calling attention to the unique position that chorio-epithelioma takes among the other malignant tumors Stockl emphasizes the difficulties of the diagnosis. He discusses the various theories of pathogenesis particularly that of Bostroem, who considers chorio epithelioma as a malignant neoplasm of purely maternal origin. An involvement of the maternal tissue in chorio-epithelioma has also been mentioned by Nevinn and in a number of other reports of recent years. Because the author considers it advisable to investigate this problem further, he gives a detailed description of a case that recently came under his observation. In a woman aged 34 a malignant atypical chorio epithelioma caused rupture of the uterus during the sixth month of pregnancy. The changes in the blood vessels of the uterine musculature indicate an involvement of the maternal tissues. The theory of a purely fetal origin of the chorio epithelioma and of the trophoblastic epithelium does not seem to correspond to the facts. The author found a complete analogy between his microscopic pictures and the results obtained by Bostroem and Nevinn. In the reported case the mechanical proliferation of the uterine musculature and especially of the vascular walls was caused by a serious systemic disease namely by syphilis. For this reason the author suggests that in the future the causal relations between syphilis and chorio epithelioma should be given consideration, particularly when the chorio epithelioma is detected during pregnancy. He points out that theoretical considerations on the basis of the material and of these observations in chorio-epithelioma indicate the possibility of a hypophyseal origin.

**Hematogenic Tonsillitis**—Krauspe examined the palatine tonsils of eleven children and fourteen adults who had died as

the result of generalized bacterial infections. In the majority of cases, especially in the children, a hematogenic involvement of the tonsils was demonstrable. Streptococcal infection was predominating in the children, and in these cases extensive inflammatory changes were noted, particularly in the blood vessels of the follicles and in the subepithelial capillaries. The changes showed all degrees of severity, from slight perivascular inflammations to extensive suppurations and necroses. In severe cases there existed follicular abscesses and necrotic suppurative inflammations of the crypts. The primary stages generally showed the aspects of resorptive, catarrhal or ulcerous infections. Demonstration of the bacteria was usually possible without difficulty. The greatest part of the bacteria were phagocytized. The subepithelial tissue showed that the bacteria had entered the crypts through the epithelium. In the course of staphylococcal infections in adults, suppurative inflammations of the crypts and abscesses of the follicles were frequently found in the palatine tonsils. Acute streptococcal infections produced in the tonsils of adults changes similar to those observed in children, and some of these changes had the aspect of primary infections. A metastatic involvement of the tonsils was also observed in a case of typhoid fever and of glomerular nephritis. In the case of glomerular nephritis, the tonsillar involvement had the aspect of peculiar focus-like necrosis of the vascular loops and of swelling of the ground tissue, particularly in the follicles. On the basis of these observations the author concludes that hematogenic involvement of the palatine tonsils is much more frequent than was formerly believed and that differentiation of the resorptive from hematogenic tonsillitis is extremely difficult, because of the great similarity in the anatomic aspects.

#### Wiener klinische Wochenschrift, Vienna

45 1433 1464 (Nov 18) 1932 Partial Index

- Permanent Results of Surgical Treatment of Pulmonary Tuberculosis W Denk—p 1433  
\*Lowenstein's Detection of Tubercle Bacilli in Blood K Haack and E Delbanco—p 1436  
\*Universal Scleroderma and Sclerodactylia S G Livieratos and P A Tselios—p 1440  
Mode of Action of Present Therapeutic Measures in Renal Diseases O L E de Raadt—p 1442  
\*Results of Cutaneous Irritation Therapy According to Ponnordorf R Tischitz—p 1445  
Progress in Knowledge on Schizophrenia E Stransky—p 1446  
Appendicitis-Like Disorders During Childhood H Mautner—p 1452

**Lowenstein's Detection of Tubercle Bacilli in Blood**—Haack and Delbanco state that of 255 specimens of blood from patients with tuberculosis of the skin, which they sent to Lowenstein for the detection of tubercle bacilli, forty-nine gave a positive result. Control tests on the blood of ninety-eight patients with other skin diseases (eczema, psoriasis, lichen and so on) gave positive results in ten cases. Pulmonary tuberculosis could be excluded with certainty in eight of these patients, while two were suffering from this disease. Löwenstein and his associate argue that the demonstration of tubercle bacilli in the blood of these eight patients does not impair the value of the method, as the existence of a tuberculosis could not be definitely excluded even with all clinical aids. The authors further call attention to Axen's report (*Klin Wchenschr* 11 1949 [Nov 19] 1932), which indicates that control tests on some of the patients, in whom Löwenstein had obtained positive results were negative. After reviewing the results obtained with the Löwenstein method by some other investigators, the authors state that they do not consider it their affair to defend any definite view with regard to this problem, but they think that all investigators agree that the Löwenstein culture medium is excellently suited for the culture of the tubercle bacillus. They express their thanks to Löwenstein for his cooperation, but they stress that their report of the positive cases detected in their material by Löwenstein's tests should not be interpreted as their acceptance of Löwenstein's claims.

**Universal Scleroderma and Sclerodactylia**—Livieratos and Tselios describe the clinical history of a woman, aged 28, who about a year ago first noticed a swelling on the dorsal side of her hands, as a result of which flexion of her fingers became impossible. A darkening of the skin became noticeable simultaneously with the edema and spread gradually over the entire body. This changed into a hardening of the skin later in the course of the disease and began on the tips of the



fingers During this stage of the disease the skin became glossy and smooth, so that the normal creases became entirely obliterated Two months later, pain developed in the joints The pains were elicited by the slightest movements and disappeared during complete rest, which made rest in bed necessary It was also noted that first the extremities and finally the entire organism became emaciated Then the intensity of the cutaneous coloring gradually receded and the skin became an alabaster white In regard to the incidence of scleroderma, the authors call attention to Naegli's report, which stated that it amounted to from 1 to 15 per cent of the dermatologic disorders The various theories of the etiology of scleroderma are discussed (1) that of dysfunction of the thyroid, (2) that of disturbances of other incretory organs and (3) that which considers the disease as trophoneurotic The authors incline most to the theory that considers the disease as an angio-trophoneurosis, but they ascribe some importance to Brissand's theory, according to which disturbances in the sympathetic nervous system and in the internal secretion are of some significance They point out that in the reported case a pluriglandular disturbance seems to have been a cause, especially certain genital disturbances, menstrual irregularities in the form of amenorrhea and oligomenorrhea For this reason they tried several hormonal preparations

**Cutaneous Irritation Therapy According to Ponndorf**—Tischitz relates his practical experiences with Ponndorf's cutaneous vaccines His observations cover a period of eight years and were made on 100 patients A tabular report indicates that he employed the cutaneous vaccine in arthritis deformans, muscular rheumatism, sciatica and neuralgic disturbances, lumbago and articular rheumatism In arthritis deformans the anatomic changes were not influenced, but the vaccination treatment checked further progress and by counteracting the pain improved the motility of the joints In all the other conditions the vaccination effected complete cure or a considerable improvement, the treatment being entirely ineffective only in one case of neuralgia and two cases of articular rheumatism The author tried the vaccination also in some cases of tuberculosis, particularly in tuberculosis of the bones and joints, and obtained some good results

### Zeitschrift fur Kinderheilkunde, Berlin

54 1144 (Nov 22) 1932

- Determination of Basal Metabolism on Nurslings with Rickets or with Rickets and Tetany A Nitschke and M Schneider—p 1  
 Acute Nutritional Disturbances During Nursing Age and Infection of Middle Ear and of Mastoid Process A S Sokolow—p 10  
 Influence of Small Quantities of Diphtheria Toxin on Schick Reaction and on Antitoxin Content of Blood Serum Criticism of Schick Test A. Curth and E Lorenz—p 38  
 Phosphorus Compounds of Milk W Hochheimer—p 49  
 Lipoid Granulomatosis or General Granulomatous Xanthomatosis (Hand Schüller Christian's Disease) H Rietschel—p 65  
 Ossification of Hand Skeleton in Mongoloid Idiocy Elisabeth Fuhry—p 82  
 \*Tumor Like Air Accumulations (Pneumatoceles) in Thorax M Zarfl—p 92  
 Scleroderma, Osteopetrolia and Calcium Layer During Childhood F von Bernuth—p 103  
 \*Symptomatology and Diagnosis of Diaphragmatic Hernia During Nursing Age and During Early Childhood H Lauenstein—p 117

**Air Accumulations in Thorax**—Zarfl shows that circumscribed, tumor-like accumulations of air in the thorax may develop in various ways and that they may be located outside the lung (extrapulmonary pneumatocele) or within the lung (pulmonary pneumatocele) An extrapulmonary pneumatocele develops from a congenital cyst of the larger air passages or it corresponds to an encysted pneumothorax, the spontaneous development of which is favored by the ease with which the pulmonary tissue of children can be torn Pulmonary pneumatoceles may be caused by congenital cystic degeneration of the lungs, but in the majority of cases they are probably the sequelae of pulmonary inflammations and develop from cavities during the disintegration of especially dense and prolonged pneumonic infiltrations Large and tense pneumatoceles can develop only when such a hollow space in the lung is connected with the bronchial lumen and has a valve closure In regard to the treatment, the author says that small accumulations of air do not require treatment as they disappear spontaneously, but the large and tense ones, which cause dangerous manifestations, must be punctured The puncture has to be made with great caution, because a too sudden release of the pressure

may have harmful results In the reported case of a boy, aged 7 months, it seemed for a while that a puncture might become necessary, but then the symptoms began to subside and the intervention was not needed

**Diaphragmatic Hernia in Children**—According to Lauenstein, diaphragmatic hernias are comparatively rare during childhood, and he thinks that this is the reason this condition is given so little consideration in the textbooks on pediatrics He points out that diaphragmatic hernia may be traumatic and nontraumatic The traumatic form has so far not been reported in children Depending on whether there is a hernial sac or not, diaphragmatic hernia is differentiated into the true form and the spurious form, the latter being the more frequent The majority of diaphragmatic hernias are congenital This can be explained by the development, because in the beginning the pleural and peritoneal cavities are one space The diagnosis of diaphragmatic hernia is extremely difficult, as the symptomatology varies greatly in different cases The symptoms are largely determined by the age of the child and by the development of complications In some instances, the hernia may be without symptoms and may remain undiscovered for years In the newly born, the manifestations are usually acute and severe Dextrocardia, cyanosis and a frightened whimpering are generally the cardinal symptoms, and the mortality rate is usually high in these cases Older children generally show an entirely different symptomatology They often lack appetite, vomit frequently and, after eating, they may have a feeling of fullness and pressure in the chest Some of these children tolerate solid food better than fluids Quite frequently a retardation in the development is noticeable The author gives the clinical histories of three children with diaphragmatic hernia The first one concerns a boy, aged 12, whose early development had been normal The hernia was discovered after a fall on the left side that had caused a hemopneumothorax The second case is that of a child, first brought to the clinic at the age of 8 weeks, because its development did not progress normally Roentgenoscopy with the aid of a contrast medium revealed a hernia of the hiatus oesophageus The child still showed a retarded development at the age of 3½ years The third case observed by the author was that of a nursing, aged 9 months The development was likewise retarded in this child Medical advice was asked on account of constipation and continuous vomiting Because of severe dyspnea and of other respiratory symptoms, a disorder of the respiratory organs was first thought of, but roentgenoscopy revealed a displacement of the heart toward the right side and also intestinal loops above the diaphragm The author emphasizes the diagnostic value of roentgenoscopy He calls attention to a report indicating that surgical treatment is effective in less than a third of the cases, and he therefore thinks that operative treatment should be resorted to only if a considerable displacement of the mediastinum or ileus makes it necessary

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- Determination of Uric Acid in Blood in Children E Polack and Sarah Kielberg—p 1219  
 \*Case of Diabetes Mellitus and Acromegaly with Cutis Verticis Gyrata E Ørkild—p 1229  
 \*Five Cases of Asparagus Dermatitis V Halberg—p 1235  
 Syphilitic Seroreaction in Two Nonsyphilitic Persons M Munch Andersen—p 1241

**Diabetes Mellitus and Acromegaly**—In this instance diagnosis of diabetes mellitus was made in 1924, of diabetes mellitus and acromegaly in 1930, and of acromegaly and glycosuria in 1932 The immediate cause of death, at the age of 60, was heart insufficiency From the history of earlier acromegaly symptoms and especially of cutis verticis gyrata dating back to childhood, Ørkild concludes that the patient had had an endocrine disturbance due to overfunction of the pituitary body since that time, this disturbance later causing a hypophyseal or acromegalic glycosuria and, several years after that, manifesting itself by typical recognized symptoms of acromegaly

**Asparagus Dermatitis**—Halberg states that three, possibly four, of his cases in workers in an asparagus canning factory, like cases reported elsewhere, were aggravated from year to year but that, unlike these, the disorder appeared immediately on starting to peel asparagus or during the first season of work The disorder disappears on termination of the work

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## THE RÔLE OF PHYSICAL THERAPY IN THE TREATMENT OF PRECANCEROUS AND CANCEROUS DERMATOSES

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Physical agents in one form or another, singly or combined, play practically the entire rôle in the treatment of precancerous and cancerous skin lesions. The dermatologist is quite fortunate in the vast array of physical agents at his disposal.

One may choose from the following according to the type and size of the various lesions:

- |                        |                       |
|------------------------|-----------------------|
| 1 Radium               | 5 Electrocautery      |
| 2 Roentgen rays        | 6 Actual cautery      |
| 3 Grenz rays           | 7 Electrolysis        |
| 4 High frequency       | 8 Carbon dioxide snow |
| (a) Cutting current.   | 9 Curet               |
| (b) Electrodesiccation | 10 Scalpel            |
| (c) Electrocoagulation |                       |

The well trained therapist is not a faddist. He should individualize in every case and be prepared to use the ideal physical agent or combination of physical agents for the case in question. By means of different physical methods or their combinations, one may arrive at the same result. This is only a matter of personal experience and technique.

A list of the various lesions treated by physical agents is given in the accompanying tabulation.

### Dermatoses

Precancerous	Cancerous
1 Senile keratoses	1 Basal cell epithelioma
2 Seborrheic keratoses	2 Prickle cell epithelioma
3 Kraurosis vulvae	3 Basal squamous cell epithelioma
4 Moles	4 Transitional cell epidermoid carcinoma
5 Radiodermatitis	5 Melanocarcinoma
6 Leukoplakia	6 Paget's disease of nipple
7 Syphilis (certain lesions)	7 Bowen's disease (intra-epidermal carcinoma)
8 Occupational keratoderma (tar, pitch, arsenic dust)	8 Sarcoma
9 Lupus vulgaris and tuberculosis cutis	(a) Fibrosarcoma
10 Lupus erythematosus	(b) Spindle cell sarcoma
11 Arsenical keratoses	(c) Giant cell sarcoma
12 Chronic ulcers	(d) Neurogenic sarcoma
13 Cicatrices	(e) Dermatofibrosarcoma
14 Papilloma of tongue	(f) Melanosarcoma
15 Cutaneous horns	(g) Lymphosarcoma

### PRECANCEROUS LESIONS

1 *Senile Keratoses*.—Hazen has estimated that about 5 per cent of the cases of senile keratoses undergo epitheliomatous transformation. Williams and others think this percentage is high. The lesion may either atrophy superficially or enlarge and become elevated. With the appearance of an inflammatory border one

should immediately suspect a malignant growth. The condition is especially dangerous when it occurs on the mucous surface of the lips. Electrodesiccation is an excellent method of treatment. By the surface applications of the monopolar current the lesion and a small margin of normal skin are desiccated. Following removal of the desiccated tissue with a curet, the current is applied to the bed of the wound. It is well to follow this treatment with roentgen rays.

2 *Seborrheic Keratoses*.—This type is the most common of the keratoses. The lesions occur especially on the chest, on the intrascapular region, about the waistline and on the face. They are sharply circumscribed, rounded or oval, varying in size from a pinhead to a quarter (25 mm) and covered with greasy, friable scales, which may be gray, yellow, brown or black. The seborrheic keratoses, when they become malignant, give rise usually to the basal cell epithelioma. Treatment of this condition depends on the characteristics and location of the lesion. Electrodesiccation is an excellent therapeutic method. When the lesion is located on the face, the cosmetic factor should be considered. When a slight scar is immaterial, the surface of the lesion and a small periphery of normal skin may be desiccated. If there is infiltration, the lesion should be curetted and followed by electrodesiccation. Other satisfactory methods of treatment are electrolysis, the actual cautery and carbon dioxide snow.

3 *Kraurosis Vulvae*.—The condition was defined by Briesky in 1885 as "retraction of the tissues of the female external genitalia with whitening of the integument"—more accurately, an atrophic, sclerosed condition of the skin of the vestibule, labia minora, frenulum and prepuce. The condition is regarded as a precursor of malignancy.

Treatment consists in a partial or complete vulvectomy followed by plastic work necessary for good genital drainage. Irradiation is contraindicated.

4 *Moles*.—In this category are included malignant lentigo and melanotic whitlow. Any mole may be the site of malignant change. However, only certain clinical types may develop into melanocarcinomas. This type is usually bluish black or slate black and may be flat or slightly raised. As a rule, it is nonhairy. Both the pigmented and the nonpigmented cells are of ectodermal origin in the premalignant mole. The so-called benign types of moles when hairy should have the hairs destroyed by electrolysis. The mole frequently disappears without further treatment. If not, one may resort to carbon dioxide snow, trichloroacetic acid or electrodesiccation. Roentgen rays should not be used in removing hairs, since subsequent treatments result in scarring.

The slate black moles are always a potential source of danger. Serious consideration is required before

therapy is instituted. If they are not subject to constant irritation and if they do not show signs of growth, it is safer to leave this type untouched. If there is evidence of malignant change, radical excision with the endotherm knife should be considered. It is best to extend well beyond the margin (three-fourths inch) of the growth and down to the underlying muscle. (The endotherm knife is the method of choice, since the sealing of the lymphatics and capillaries is accomplished while cutting—thus minimizing the possibility of metastases.) One day later, radium is applied to the form of element or emanation heavily filtered to the original site of the lesion, to the surrounding area from 2 to 3 inches in diameter and also to the glands that drain the area. Some cancer therapists prefer to use radium alone for the treatment of melanomas and they report a fair number of satisfactory results. If this method is used, gamma rays in sharp doses including an area beyond the lesion should be given.

5 *Radiodermatitis*—This condition may be produced either by one massive overdose or by the cumulative effect of repeated small doses of roentgen rays or radium. The sequelae may appear in the following order: pigmentation, telangiectasia, keratoses, ulceration and, in occasional cases, carcinoma, which develop in the ulcer bed. Some dermatologists use roentgen rays or radium in the treatment of this condition. This is not good therapy. The treatment of choice is removal by some form of surgery. Keratoses should be destroyed by some form of high frequency current, preferably electrocoagulation. If the area is large, removal should be followed in due time by skin grafting.

6 *Leukoplakia*—Advanced cases of leukoplakia have been frequently followed by malignancy. The condition presents itself as white patches on the tongue, oral and genital mucosae. When these begin to fissure or show signs of inflammation, malignancy should be suspected. The small lesions may be destroyed with the actual cautery or by means of electrodesiccation. Leukoplakia may recur under this treatment. This, however, is less likely to happen if strict attention is paid to prophylaxis.

Radium, roentgen rays, carbon dioxide snow, chemical caustics and electrolysis should be condemned for the treatment of this condition.

7 *Syphilis*—The important factor in the treatment of syphilis is, of course, antisyphilitic therapy. Certain types of tertiary syphilitic manifestations, however, predispose to malignancy. These may be in the form of gummas, interstitial glossitis and leukoplakia. In addition, malignant tumors frequently develop in scars from previous syphilitic ulcerations in the mouth. All infiltrated ulcerations should be looked on with suspicion. Too often, the physician is misled in the diagnosis of carcinoma because of a positive serologic reaction. All persistent ulcerations of the mucous membrane should be studied grossly and microscopically to determine the possibility of malignancy so that physical agents may be instituted at once. Preferably, in cases in which a malignant condition is found, I resort to electrocautery or scalpel followed by roentgen rays, radium or both. These agents will be considered later under the treatment of oral carcinomas.

8 *Occupational Keratoderma*—The malignant growths that occasionally follow occupational exposure to various chemicals are usually of the prickle cell type and are invariably preceded by keratoses. Among these irritants may be mentioned tar, pitch, arsenic, dust, oil

and heat. The discrete lesions are treated in the same manner as senile keratoses—by electrodesiccation.

9 *Lupus Vulgaris and Tuberculosis Cutis*—Carcinoma due to lupus vulgaris usually begins in the scar or lesion of many years' duration. There has been much controversy in regard to the use of roentgen rays and radium in the treatment of lupus vulgaris. Some state that roentgen rays within safe limits may precipitate malignancy, others, that a malignant growth results only as a result of overdoses administered either massively or fractionally.

The treatment of lupus vulgaris consists in destroying the discrete nodules by electrodesiccation. The actual cautery and electrolysis may also be employed. Superficial nodules are dehydrated by the application of a strong current to the surface for half a minute.

Electrodesiccation is the method of choice in the treatment of tuberculosis cutis.

10 *Lupus Erythematosus*—Carcinoma in this condition is much less frequent than in lupus vulgaris and usually occurs in untreated cases.

(a) *Discoid Varieties*—The early lesions are from pea to bean sized. They do not fade under pressure and are covered with a greasy adherent scale. The primary lesion enlarges peripherally and may become the size of the palm of a hand or larger. Its border is red, firm to the touch and elevated. The treatment of this type consists in application of carbon dioxide snow. (Roentgen and radium therapy are contra-indicated.) In addition, I use gold solution intravenously and locally.

(b) *Disseminated Type*—This is an acute condition usually occurring in patients who have discoid patches. Lotion alba is applied in this condition. When response to this treatment is unfavorable, carbon dioxide snow is used. Treatment with ultraviolet radiation from an air cooled or a water-cooled quartz mercury vapor arc lamp is practically valueless and may cause an exacerbation.

11 *Arsenical Keratoses*—This condition presents itself after the long continued internal use of arsenic. Sixty cases of carcinoma following arsenical keratoses are reported in the literature (there are many unreported). The deep lesions on the palms and soles are treated expectantly, and the patient is kept under observation. Discrete lesions are treated by means of electrodesiccation.

12 *Chronic Ulcers*—Under this heading are included ulcers due to varicosities, pellagra, fistulas and the like. Malignant change in these cases is rare. Many cases are ameliorated by erythema doses of ultraviolet radiation or daily treatment with graduated doses of solar radiation or artificial ultraviolet rays.

13 *Cicatrices*—Excluding scars of lupus vulgaris, syphilis and lupus erythematosus, the occurrence of cancer in old scars is infrequent. Large scars resulting from third degree burns are most likely to develop carcinomas. Irradiation with erythema doses is advised. Treatments are not repeated until all evidence of reaction has disappeared. This will cause an increase in circulation with resultant absorption of scar tissue. Roentgen rays and radium are used. Occasionally mild cases may be improved by frequent applications of galvanic currents. Massage is beneficial.

14 *Papilloma of the Tongue*—This condition is common and appears at all ages. It is usually located on the dorsum of the tongue. The papillomas may be single or multiple, and histologically they resemble the

common wart There is a tendency toward malignant change, which is indicated by fixation, growth and ulceration

Electrodesiccation is the treatment of choice in this condition

**15 Cutaneous Horns**—These are peculiar horny growths which are characterized by excessive and progressive keratoses These are most frequently found on the face and scalp and less often on the buttocks, penis, scrotum and nails Owing to irritation due to movement, the warty base may assume malignant change The treatment consists of removal of the horn surgically and the subsequent desiccation of the base

#### CANCEROUS

**1 Basal Cell Epithelioma**—This type of malignancy may develop in a seborrheic keratosis The incidence is greatest in patients past 40 The lesions may occur on any part of the skin They may be superficial or deep, nodular or ulcerating Eighty per cent of the lesions occur about the head and neck The majority of the lesions can be permanently eradicated if adequate therapy is begun early After there has been invasion of bone and cartilage, the condition is much more resistant to treatment, and intensive treatment is required

There are various types of therapy to be employed in the treatment of this condition A large number of these lesions have responded satisfactorily to roentgen treatment in our clinic during the past fifteen years The use of radium has rendered results that were equally good

In several cases in which roentgen rays had failed, radium was used with good results Radium has a distinct advantage in the treatment of lesions in certain locations, such as the inner canthus of the eye and the alae of the nose Roentgen rays, on the other hand, are more available and less expensive

I have used from three to four skin units of the unfiltered x-rays, repeating this two weeks after all reaction has subsided (from six to eight weeks) Usually only two such treatments were necessary The radiation is preceded by electrocoagulation, which is employed to destroy the larger lesions Electrothermic methods also seem to be an important factor in preventing recurrences and decreasing the amount of radiation necessary

When the ear or nose is involved, the lesions are destroyed by electrocoagulation or excised with a high frequency knife This is followed by two skin units of unfiltered x-rays or an equivalent dosage of radium Lesions of the eyelid without conjunctival involvement are treated with x-rays or radium (Ear lesions do not respond satisfactorily to radiation therapy alone)

When radium element or radon is used, the dosage is from 40 to 50 mg hours per square centimeter for the small superficial lesions and from 60 to 80 mg hours per square centimeter for deeper lesions

**2 Prickle Cell Epitheliomas**—This lesion is more serious than the basal cell type because of its more rapid growth its greater tendency to metastasize and its greater resistance to therapy This type may follow sunburn, arsenical and tar keratoses, smokers patches and other types of leukoplakia They may occur anywhere on the body

Treatment varies as to location and character of the lesion I find it desirable to remove the lesion by electrocoagulation and follow this by radium therapy, using massive gamma rays When the glands are involved surgery is resorted to in chosen cases When

glandular involvement is not apparent, it is best to administer prophylactic exposures of roentgen rays

Radium may be used with satisfactory results The required dosages are given over a period of from four to eight days, equal time being given each day over this period after the method of Regaud Continuous treatment with large doses for several days has been proved quite satisfactory

In some cases, the implantation of gold radon seeds into the tumor has been successful, 133 millicurie hours to the cubic centimeter being given

Inner canthal lesions of the eye are best treated by electrocoagulation followed by radium therapy

Lip lesions respond well to electrothermic methods followed by radiotherapy From 80 to 100 mg hours per square centimeter through a filter of 2 mm of brass is used The area to be treated should include 5 mm of tissue beyond the lesion Deeply infiltrated lesions are treated as described, followed by the implantation of from 1 to 15 millicurie gold radon seeds, one seed being used for every cubic centimeter of tissue treated Then prophylactic erythema doses are administered to the lymphatics draining the involved area

Lesions involving the tongue, floor of the mouth and buccal mucosa should each receive special consideration, since they differ widely in regard to malignancy and radiosensitivity Metastases are greater from the tongue and floor of the mouth than from the lip, and the glands involved are deeper Tongue lesions are best treated by using 1 or 2 millicurie gold seeds, placing one seed to each cubic centimeter in and around the tumor area and from four to six such seeds in the base of the tongue, thus blocking the draining lymphatics Quick uses gold seeds interstitially and radon for external radiation, following this with high voltage roentgen rays

Penile epitheliomas are usually of the prickle cell type and respond well to roentgen rays and radium in early cases When infiltration is deep, extending past Buck's fascia, amputation of the organ by electrothermic methods is advisable Prophylactic roentgen therapy is given to the inguinal glands

Epitheliomas of the vulva are treated by excision with the high frequency knife, followed by the implantation of radon seeds Prophylactic rays are given to the groin

**3 Basal-Squamous Cell Epithelioma**—This represents the transitional type occurring between basal and squamous cell epitheliomas

Treatment consists in wide excision by electrothermic methods, followed by radiotherapy, or large doses of irradiation alone may be used successfully

It should be remembered that this type is prone to metastasis

**4 Transitional Cell Epidermoid Carcinoma**—This type occurs most commonly on the tonsil, the base of the tongue and the nares It is subject to early metastasis However, it responds rapidly to irradiation The lesion is flat and finely granular, possessing a velvety surface

The first sign of the disease is often swelling of the neck, since the primary lesion is frequently small and inconspicuous

Early radiotherapy is the treatment of choice, since this type possesses a marked radiosensitivity Gold radon seeds may be implanted into the primary lesion High voltage roentgen rays and radium should be applied to the metastatic lymph nodes

5 *Melanocarcinoma*—This is the type that has its origin in the slate colored, blue or bluish black moles. It is highly malignant. The prognosis is always serious and, even with treatment, uncertain, since infiltrating tumor cells are often found inches away from the primary lesion.

The treatment should be wide excision with the high frequency knife followed by electrocoagulation. Irradiation should follow this procedure.

6 *Paget's Disease of the Nipple*—This condition begins as a mild eczemoid condition, which may spread over the areola and entire breast. Later it becomes ulcerated. Paget's disease should be considered carcinomatous and symptomatic of deeper carcinoma of the breast. Pathologic investigation in these cases reveals malignant changes within the ducts.

Treatment is radical, consisting in total mastectomy followed by irradiation. Irradiation alone is unsatisfactory.

7 *Bowen's Disease*—Although this condition is considered by some as a precancerous condition, it is in reality a histologic entity which should be classified as an intra-epidermal carcinoma. The lesion either remains in the epidermis indefinitely or breaks through the corium, becoming a prickle cell carcinoma.

Early surgical removal by the high frequency knife is advisable. Large doses of roentgen rays and radium are required, since this type is very resistant to radiotherapy. Sharp erythema doses of grenz rays have been administered in some of my cases with success.

8 *Primary Sarcoma of the Skin*—This condition is uncommon. There is considerable variation as to the type, structure, malignancy and response to radiotherapy.

(a) The fibrosarcoma is best treated by wide surgical excision, since it responds poorly to radiotherapy.

(b) The spindle cell type may be composed mostly of cells or mostly of stroma. The cellular types are treated with roentgen rays and radium, the fibrous types, by surgical excision preceded and followed by irradiation.

(c) The giant cell type responds readily to roentgen rays and radium.

(d) Neurogenic sarcomas arise on the extremities, abdomen and chest wall as small movable structures. Radical excision followed by irradiation has rendered the best results.

(e) Dermatofibrosarcomas are acellular spindle types slow to metastasize. Wide surgical excision is advised, since this type is radioresistant.

(f) Melanosarcomas, which arise from pigmented lesions in the cutis, are treated the same as melanocarcinoma.

(g) Lymphosarcomas usually arise in a chain of lymph glands. They may arise from any lymphatic tissues. Radiotherapy is most satisfactory in the treatment of this condition. When the mass is unusually hard or the condition is recognized early, surgery and combined radiotherapy give the best results.

SUMMARY

It has been shown that there are some thirty or more different cancerous and precancerous lesions, which are treated by various physical agents. Although there are about ten different physical agents at our disposal, the method used depends on the character of the lesions and their location.

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RADIUM THERAPY IN CARCINOMA OF THE LIP

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Dr. William Halsted once remarked that it would be a great day for surgery when all malignant disease was removed from its field of operation. That day bids fair to be at hand for certain groups of carcinoma, notably carcinomas of the lip, in which radium therapy stands preeminently as the method of choice.

This paper offers for analysis records of the Howard A. Kelly Hospital for the years 1913-1931, during which period 535 patients suffering from carcinoma of the lip presented themselves. It is interesting to note here that the first of these patients, treated in July, 1913, was entirely well when last seen in 1918. I have taken as representative of the success of irradiation those cases treated during the years 1921-1929, inclusive. The material previous to 1921 has not been included for two reasons: first, because nearly all cases referred to this hospital prior to that time were those that had been rejected by surgeons on account of massive glandular enlargement, and, second, because the technic and dosage of radium therapy were at that time still in the experimental stage. Since 1921, an increasing proportion of patients has been referred for radium in whom the lesion was still localized or the glandular enlargement moderate, also, since that year a more standardized method of application and calculation of dosage has been established.

In this analysis great care has been taken to include only those lesions which were diagnosed true carcinoma and which involved the vermilion epithelium of the lip. All lesions diagnosed keratosis, leukoplakia, wart and precancerous keratosis or tuberculous or syphilitic lesions have been excluded. Diagnosis in every case was made by a man experienced in carcinoma of the lip. Wassermann tests were taken as a routine to exclude the possibility of confusion with syphilis. Biopsies were not made as a routine because of the extreme danger of provoking metastasis, however, in doubtful cases a biopsy can be safely made immediately

TABLE 1—Classification

	Lower Lip	Upper Lip	Male	Female	Total
Number (1921-1929)	241	11	235	17	252
Percentage	95.54	4.36	93.25	6.75	100

after irradiation. No case in which a chronic ulceration had been present less than four months was diagnosed epithelioma.

A few general facts about all cases (1921-1929) are of interest. Over 96 per cent were in the lower lip and over 93 per cent in men.

Of the cases of carcinoma of the upper lip, eight of the eleven were in women, three in men. This large percentage of occurrence in men and in the lower lip would bear out the contention that pipe and cigar smoking are etiologic factors in carcinoma of the lip, though accurate figures are not available on the incidence of smoking in this study, a large majority of the patients were cigar or pipe smokers, though by no means all, the proportion of smokers to nonsmokers being approximately 86 to 14. Exposure to weather and intense sunlight was evidently an equally large factor, as approximately



70 per cent of the cases were among farmers, sailors, soldiers and other outdoor workers. A history of direct injury to the site of the lesion was elicited in only eight cases, 4.85 per cent. It is also a striking fact that though a great many carcinomas are seen in Negroes, not a single carcinoma of the lip, of the 535 reported, was in a member of that race. Only 4.6 per cent of the cases were associated with a positive Wassermann reaction, none with clinical syphilis.

TABLE 2—Age Incidence

20-29	30-39	40-49	50-59	60-69	70-79	80+
5	19	50	55	68	37	7
Age not recorded						11
Age of youngest						21 years
Age of oldest						88 years
Average age of whole group						56.8 years

TABLE 3—Incidence in Groups

	Number of Cases	Per Cent
Group 1	151	50.95
Group 2	13	5.18
Group 3	36	14.23
Group 4	52	20.61
Total	252	100.00

The age incidence (1921-1929) is shown in table 2.

Taking for analysis the 252 cases seen from 1921 to 1929, inclusive, patients were divided into four groups, according to the extent of the involvement of the disease.

GROUP 1—Lesions involving not more than one half of the lip, with no palpable glandular enlargement on first examination. This group consists of those which should nearly all be curable with any efficient treatment.

GROUP 2—Lesions involving more than one half of the lip or extending out of sight inside the buccal cavity, no palpable glandular enlargement on first examination. This group consists of those in which operation would have been practically out of the question.

GROUP 3—Those with definite glandular enlargement.

GROUP 4—Cases in which radium and surgery were combined, or those in which previous radium, roentgen or surgical treatment had been given elsewhere.

This paper is primarily concerned with patients constituting group 1. Every case in this group was well within the limits of complete extirpation of the diseased area by surgery and should therefore be considered curable whatever type of therapy was employed. Of the 151 cases 10 must be deducted as untraceable in January, 1932. The difficulty at this clinic of tracing patients with carcinoma of the lip is due to several factors. The majority come from long distances, out of the state and change addresses without our knowledge, a large number are sailors or soldiers without permanent domicile, but, chiefly, the patient can see for himself that his lip is well, differing from internal growths, and feels no necessity for keeping in touch with us or his local physician. All those put down as untraceable in January, 1932 were followed for a period of months or years and when last seen had no evidence of recurrence but they are not included in the tabulation. On the other hand, all untraceable patients who had a lingering or recurrent growth when last seen are included in the table as dead of carcinoma, thus, of course tends to cause a slight error in statistics in favor

of the failures as against the successes of radium. It will also be noted that the average age of incidence of the disease (56.8 years) is almost identical with the average span of life, so that longevity of the patient following treatment is in many cases interrupted by death due to some intercurrent disease. I have also deducted four patients who died of intercurrent disease with the lip apparently well before two years had elapsed after radium treatment.

There remain, then, for analysis 137 cases in group 1, of which all were treated more than two years ago (1921-1929), 82 more than five years ago (1921-1926) and 13 more than ten years ago (1921). Of the total number treated from two to ten years ago, ninety-seven (70.8 per cent) were living and well without recurrence of the disease in January, 1932. Tables 4 and 5 show that 128 patients (93.4 per cent) in group 1 (1921-1929) were living and well two years or longer after treatment. Taking only those cases in which five years has elapsed since treatment (1921-1926), sixty-seven (81.8 per cent) of the eighty-two patients were living and well five years or longer. Of the thirteen patients treated more than ten years ago, eight (61.5 per cent) are still living and well. For all practical purposes, if the patient remains well for two years, he may be considered cured, as nearly all recurrences or metastases in unsuccessful cases develop within the first eight months following treatment. Since the average age of incidence of carcinoma of the lip is over 56 years, it is difficult to carry statistics beyond five years after radium treatment, because of the high incidence of death due to intercurrent disease.

The thirteen cases in group 2, in which the local growth was very extensive but there were still no

TABLE 4—Patients Living and Well Without Recurrence

Year	Patients	Years								Died of Car- cinoma	
		2	3	4	5	6	7	8	9		10
1921	13	12	12	11	11	11	10	9	8	8	1
1922	14	14	13	12	12	12	10	8	8		0
1923	17	16	10	10	10	10	15	11			1
1924	9	9	9	9	9	8	8				0
1925	15	14	14	11	9	9					1
1926	14	13	11	11	10						1
1927	17	14	11	10							3
1928	19	17	14								2
1929	19	19									0
Total	137	128	100	80	67	50	43	28	16	8	0

TABLE 5—Patients Living and Well, Two, Five and Ten Years After Treatment

	Number Treated	Living and Well	Per Cent
2 years or more	137	128	93.3
5 years or more	82	67	81.7
10 years	13	8	61.5

palpable glands, give the most striking results, though necessarily the percentage is poor. One patient died of intercurrent disease less than one year after treatment, of the twelve remaining patients, four (33.3 per cent) were living and well two years or more, and three (25 per cent) five years or more, after radium treatment, one having died of intercurrent disease without recurrence of the carcinoma. Failure in this group is due mostly to the fact that glandular metastases frequently became palpable shortly after the patient was first seen and were undoubtedly present, though not palpable, at the time of admission.

Group 3 consists of thirty-six patients having palpable glandular enlargement on first examination. Of these, only two were well four years after treatment, the others were known to be or were considered dead. Practically all these cases were unquestionably beyond help surgically. The primary lesion in a majority of these patients was healed with radium, and the metastases were held in abeyance for many months. Palliation alone in these cases would well justify the use of radium, even if there were not a single cure. It is well to note here that metastases from carcinoma of the lip are late recurrences. Out of the 200 patients (groups 1, 2 and 3) coming to this clinic without having received previous treatment by surgery or radiation, 164 (82 per cent) had no palpable glands on first examination.

Group 4 consists of fifty-two patients who had previous surgical removal, postoperative recurrences, or previous radium or roentgen treatment elsewhere. These cases are so varied, owing to individual circumstances, that they do not lend themselves to statistical analysis. In this group are included twenty-four patients who had recurrences following operation and five who had recurrences following roentgen or radium treatment given elsewhere. Fifteen had a combination of surgical and radium treatment, and the remainder either refused treatment or were in such a hopeless state that treatment was not considered worth while, the latter had invariably been treated by "local healers" with "cancer pastes."

Of the 164 patients in groups 1 and 2, only twelve (7.3 per cent) received more than one application of radium. In the routine treatment, radiation has been given by radon bulbs, one or more bulbs containing from 400 to 750 millicuries each, filtered by 1.5 mm of brass and 6 mm of felt, being used. One or more bulbs were used as foci of radiation, according to the area covered by the lesion, and the dosage varied from 250 millicurie hours in the smallest lesion to 1,350 millicurie hours in the largest one. The average dose was from 500 to 750 millicurie hours, this was given at a single application. A marked desquamation followed after four or five days and then slow healing, with heavy scab formation for a period of from six to ten weeks. During this period of healing the patient was advised to remove scabs daily after soaking with warm water and to apply 5 per cent mercurochrome aqueous solution or ointment. This tended to prevent secondary infection by forming a protecting film. In nearly all cases, the lip was perfectly healed without the slightest scar or defect within four months. In the more extensive cases in which there had been widespread destruction of tissue, there was a remarkable tendency toward restoration of the normal contour, leaving only small depressions—never any drawing or contracture of the lip such as follows operation. In twelve cases, from a period of four months to a year later, there were still areas of abnormally thickened epithelium, and a second similar but smaller treatment was given. In six cases, mostly in group 2, in which there was very deep infiltration, treatment was given by implantation with gold needles or a combination of needles and bulbs. In many cases high voltage roentgen therapy was given to the glands of both sides of the neck, even though not palpable, as a prophylactic measure. This procedure was not carried out as a routine, but it is advisable and at present is done in all cases.

From the analysis of 137 cases in group 1 of carcinoma of the lip without metastases I would recommend in this group treatment by radium as preferable to surgical excision for four reasons:

- 1 The end-results and percentage of cures are excellent—over 93 per cent two year cures and 81 per cent five year cures.
- 2 There are better cosmetic and functional results.
- 3 There is a vast saving in expense and time to both patient and hospital, as no hospitalization is necessary.
- 4 The patient can carry on an occupation as before without an economic loss.

In group 2, I would advise radium to the primary lesion and radical dissection of the glands of the neck, as the end-results show that in nearly all cases in this class metastases have already taken place, though they are not palpable.

In group 3, I would advise irradiation of the primary lesion and removal of the glands surgically, if still small and movable enough to make operation feasible. Unfortunately, in most of these cases the glandular involvement is so fixed and infiltrated that removal is impossible. Here I feel that implantation of radium needles and deep radium or high voltage roentgen therapy to both sides of the neck offers a good deal in alleviating pain and prolonging life and also a remote possibility of a cure.

#### CONCLUSIONS

1 The answer to the question as to whether radium is an effective treatment for cancer of the lip is that, regardless of allowances, deductions and comparative statistics, the fact remains that 200 patients with definite carcinoma of the lip, some moderate, some extensive, a few even with glandular metastases, were treated by radium alone, and out of these 200 primary cases there remain 133 patients living and well without recurrence two years after treatment, and out of 99 cases treated five years or more ago, 72 patients were living and well five years after treatment.

2 The disease is one that is easily recognizable before it has become extensive locally or has metastasized to the glands and is late to metastasize (82 per cent of the primary cases show no palpable metastases), therefore, one might reasonably expect to get practically all cases while they are still in the curable stage and by irradiation cure over 90 per cent without hospitalization.

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**The Mystery of Cortical Function**—In the present state of our knowledge of the adrenal cortex, it is impossible to draw any definite conclusions regarding function. We have pointed out several times in this paper that the real functional significance of the adrenal cortical hormone is unknown. All of the changes reported as occurring in the organism following bilateral adrenalectomy, we regard as secondary to some at present unknown, underlying derangement of the animal. To our knowledge no one has yet succeeded in presenting definite, clear-cut unequivocal evidence of cortical function. The literature is filled with theories and hypotheses of adrenal function—on the relation of the cortex to lipid, carbohydrate, tissue metabolism and mineral metabolism. However, it is our candid opinion that none of these theories or hypotheses withstand careful scrutiny and experimental test, nor do they throw any new light upon the mystery of cortical function. The function of the adrenal cortex is a suitable and intriguing one, but the solution is not yet at hand—Swingle, W. W., and Pfaffner, J. J. The Adrenal Cortical Hormone, *Medicine* 9:412 (Dec) 1932.

# SYPHILITIC CEREBRAL ENDARTERITIS IN A HOMOSEXUAL PSYCHO- PATHIC PATIENT

A MEDICOLEGAL PROBLEM

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The older part of the human brain, like the brain of fish, amphibians and birds, is an automatic machine which acts immediately when stimulated by outside occurrences. Light falls on the eye, the pupils close to exclude it. In the higher levels of this old brain, conscious feelings and emotions are provided in order to reinforce the responses and make them more certain. An insulting enemy appears, anger and attacking movements are produced. This level in which feelings appear is the instinctive brain.

The brain cortex is of recent development. It checks the immediacy of the responses for a time, during which a new process, thinking, occurs, which is unknown in lower animals. This new process is registered in our consciousness and introspectively is labeled "remembering," "reasoning" and "decision" (intellect). Biologically speaking, the cortex is a device by which man profits to the highest degree from his past experiences. When the instinctive part of the brain, aroused, say, by an attractive sexual partner, is about to force a man to sexual gratification, the cortex checks the action while mental pictures of past experiences (his own and those of others) are brought into consciousness. These bring still other pictures of what will occur in future if he performs the particular act suggested.

In this way, the brain is acted on not only by the immediate potential sexual partner but by pictures of an angry husband, policemen, and scandalized neighbors. Each picture produces its own appropriate feelings which may be pleasant or painful. In the end, the cortex ceases to hold the brain in check. The picture in the series which on the whole aroused the most satisfactory feelings acts effectively and determines the corresponding behavior.

Insanity may be due to disease affecting the region of feelings, the intellect, or both. It is commonly thought that insanity involves only the intellect. It is supposed that a man cannot be insane unless his memory or his reasoning power is seriously disturbed. It is important to note that the most serious forms of insanity from the standpoint of the law are those in which the intellect is well preserved while the deeper seated instinctive feelings are abnormal. Such a man is insane as to motivation but unfortunately has enough intellect to carry out his insane plans.

Regarding the case that is to be described, one physician stated that the patient was certainly not insane and in giving his reason said: "I talked with him and found his memory and his knowledge of all sorts of affairs were as good as mine."

## REPORT OF CASE

**History.**—I was a boy born out of marriage in 1907 was described in retrospect by his mother and grandmother as "a very nervous child" never interested in the games and occupations of boys but prominent in crocheting, tatting and embroidery. He was fond of drawing and other art work. He was considered a sissy and frequently dressed in girls' clothes, and he had a normal address for girls and never had a love affair. He grew up effeminate in appearance and with a delicate voice. There followed a continuous series of abnormal

sexual unions with boys and men. In conduct he was mild, and never violent or aggressive. During the year before he came into public attention as a murderer, he lived in Chicago with a Jewish boy, as he described it, "we were the same as a man and his wife." He states that some students lured the partner from him. This was followed by a state of confused emotionality. He wandered around the streets restlessly or remained shut up in his room.

On returning to his Iowa home shortly after this event, he persuaded a 12 year old boy to go for a walk. Failing to induce the boy to yield to his perverted sexual desires, he murdered him.

The judge who tried the prisoner was a man of probity and intelligence. He desired to do away with the usual farce of having lawyers examine expert witnesses. So he summoned two physicians and gave them an opportunity to examine the prisoner in the jail in the presence of the chief of police, after which he questioned them in his chambers. I was one of the two physicians. My examination of the prisoner in the jail revealed the following:

He was effeminate in face, figure and voice. He stated that he was an interior decorator and that he loved art. He conversed in a casual, unconcerned manner, acknowledged his



Fig 1.—Infiltration around blood vessels in the pia arachnoid. Enlarged thick-walled blood vessel. (Nissl.)

crime and expressed conventional regret and sympathy for the parents of the murdered boy but showed no sign of penitence or fear. He spoke of the probable results of the trial without bravado, more with an air of impersonal interest. Although he apparently thought it would be a point against him by still further arousing popular disgust, he nevertheless told me of having been infected with syphilis several years before, of three positive Wassermann reactions, and of treatment in a number of hospitals, which he mentioned by name.

**Physical Examination.**—His general health appeared excellent. The pupils responded stiffly and with only a slight contraction to light, but widely in accommodation. His tendon reflexes were overactive. He hesitated in repeating test syllables running r's and l's together. There was no tremor, no ataxia and no disturbance of sensation.

**Mental Examination.**—Memory, orientation, and reasoning power were normal. There were no sense deceptions or delusions. His emotional tone was bland and unconcerned. Without any show of effrontery or conscious self-control such as experienced criminals often exhibit, and in contrast with what one would expect from his general timidity and delicacy or make up he conversed with nonchalance about his immediate predicament and his probable execution. He made no excuses

but seemed mildly interested in the alleged fact, as he stated it that when he had looked at the boy, he went into "a sort of furor or coma," and he now wondered why he should have done so, as it was so different from anything he had ever felt before. He turned easily from this subject to indifferent matters and conversed about them with the casual interest of a person receiving a social call.

When asked by the judge whether or not I considered the prisoner insane, I replied that the history indicated that he had had syphilis and that the mental and physical examinations at present pointed to brain syphilis and were consistent with those often seen in early dementia paralytica. I refused to commit myself to an opinion either that the prisoner was sane or that he was insane unless I should be given opportunity to make serologic examinations. Being director of the State Psychopathic Hospital, I advised that the prisoner be sent there for examination and offered to give a definite opinion after the necessary studies had been completed.

This offer was not accepted.<sup>1</sup> After I had testified, my connection with the case ceased. The newspapers several days later erroneously stated that both the other psychiatrist and I had testified that the prisoner was sane, and they reported that he had been sentenced to be hanged about a year from the date of the trial. It was natural to infer that the court must have obtained satisfactory evidence from other sources that brain syphilis was absent and that the prisoner was sane. The case was then dismissed from my mind.

About a year later, the week before the date for the prisoner's execution, his lawyer placed before me a report on the spinal fluid, said to have been removed the day before the trial. The report revealed 12 mononuclear cells, a trace of globulin, negative Wassermann reaction, and a colloidal gold curve rising only to the second line in the middle tubes. It stated that the blood Wassermann reaction was positive.

The attorney asked me whether that report proved that the patient was sane. My reply was that it was inconclusive, that if we could be sure of the Wassermann test of the spinal fluid, dementia paralytica was very unlikely and could be

execute the man until an examination at the present time revealed his clinical and serologic status, for, if brain syphilis or beginning dementia paralytica had been present the year before, the likelihood was that sufficient advance would have occurred during the year to give clear-cut neurologic and laboratory evidence, which would remove the doubt.

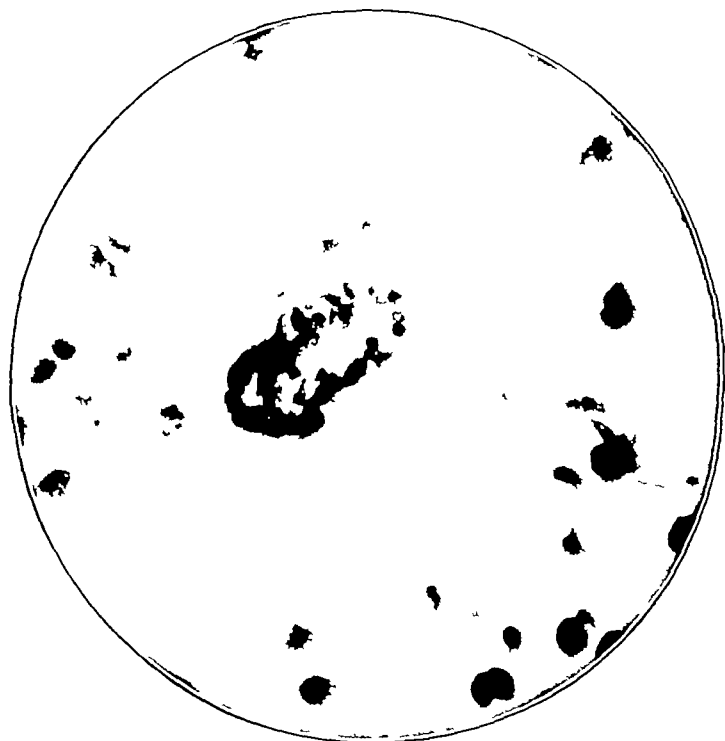


Fig. 3—A small blood vessel with endothelial proliferation somewhat resembling small cell infiltration. Note atrophic area around vessel (Nissl).

The prisoner's attorney was both able and generous. Without financial reward, indeed at considerable expense to himself, he had sought only to have the safeguards provided by law observed in the case of his unfortunate client. He at once applied to the governor of the state for a reprieve long enough to secure the medical examination which was obviously called for. The laws of Iowa provide that if a reasonable doubt as to the sanity of a prisoner exists, the executive or the prison warden, even up to the minute of the execution, shall delay proceedings until the medical examination is made.

The night before the morning set for the execution, the lawyer informed me that the prisoner's request for a reprieve had been refused. In the meantime, information was brought that the prisoner had directed the prison warden to turn over his body to the state university for a postmortem examination. Although I had no connection with the case and felt only the interest of an ordinary citizen regarding the good name of the state and the securing of fair play for a prisoner, believing that some misunderstanding must exist in the executive's mind, I telegraphed him that a reasonable doubt existed as to the prisoner's sanity and that an appropriate medical examination would resolve that doubt.

No reply was given to this message. The newspapers stated that the youth was hanged at the appointed hour. His light-hearted conversation and gay manner as he stepped on the trap-door were described by one newspaper reporter as indisputable evidence that no insanity existed.

*The Postmortem Examination*—Pathologists from the University of Iowa performed an autopsy immediately after the prisoner was pronounced dead. The brain and spinal cord were removed and placed in solution of formaldehyde. Within a few hours, blocks were cut from the brain for alcohol fixation, which were prepared and studied in my laboratory.

Microscopic examination revealed generalized mild round cell infiltration of the membranes, while in many parts of the pia-arachnoid the infiltration was dense (fig. 1) and included large mononuclears, mast cells and plasma cells. The blood vessels in the pia mater showed widespread proliferation of the intimal cells and thickening of the walls, with hyaline degeneration.

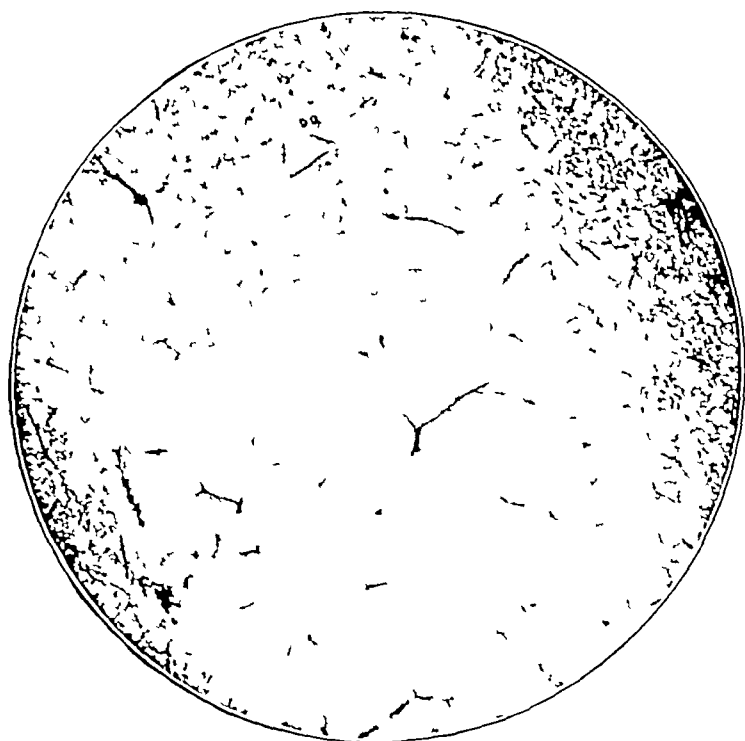


Fig. 2—Increased number of small blood vessels. Higher magnification (as in figure 5) shows numerous, still smaller vessels in any area inspected (Weigert Pal).

assumed to be absent, but that several Wassermann tests should be made, so as to rule out errors in technic. I stated that the report made it the clear duty of the state not to

<sup>1</sup> The services of the State Psychopathic Hospital were offered to determine a scientific point that had to be clear before the law could function in this case. It was afterward reported that the judge desired to avail himself of this offer but was hindered from doing so by some statute. If this is true, it appears that a state hospital for the study of insanity could not be used to serve a state court in a case which hinged on a question of insanity.

The white matter and especially the brain cortex, particularly in the frontal and parietotemporal lobes and in Ammon's horn, were diseased. With low power lenses an enormous increase in the number of small blood vessels was apparent (fig 2), together with thickening of the intimal lining of the small and middle-sized vessels. In various localities, in Nissl stained sections, large or small pale areas appeared which under high power showed absence of nerve cells with increase in neuroglia.

With higher magnification, extensive multiplication of capillaries was observed, with budding and new capillary formation (fig 5). Many of the smaller blood vessels were completely stopped by intimal plugs, in many, the lumen was obstructed or divided into several channels (fig 3). Longitudinal sections of the blood vessels showed an increase in endothelial elements, which often gave the appearance of infiltrations.

The glia cells throughout showed increase in cytoplasm. In many instances the cell body was confusable as to size and appearance with nerve elements. Massive conglomerations of glia cells were numerous (figs 4 and 6). Few nerve cells were found which did not show Trebant cells, in some cases a few, in many a large number, lying within recesses in the cytoplasm.

The nerve cells in all preparations showed dilapidation (fig 5). The nuclear chromophil dots could not be distinguished, and the nuclei were displaced toward the periphery. The Nissl granules in most of the nerve cells had disappeared, and the cell body showed a cheesy consistence, in many cases with vacuoles. A large number of the cells were shrunken, distorted and honeycombed.

Sections stained by Jahnke's method revealed no spirochetes.

The neuropathologic diagnosis was syphilitic meningitis of the spinal cord and brain, syphilitic endarteritis throughout the whole nervous system, degeneration of nerve cells, and reactive proliferation of the neuroglial elements.

Early dementia paralytica was clinically indicated by (1) the sudden resort to violence in uncontrolled obedience to instinct in a man theretofore mild and passive, (2) the euphoric mood of the patient at the time of my examination, which became

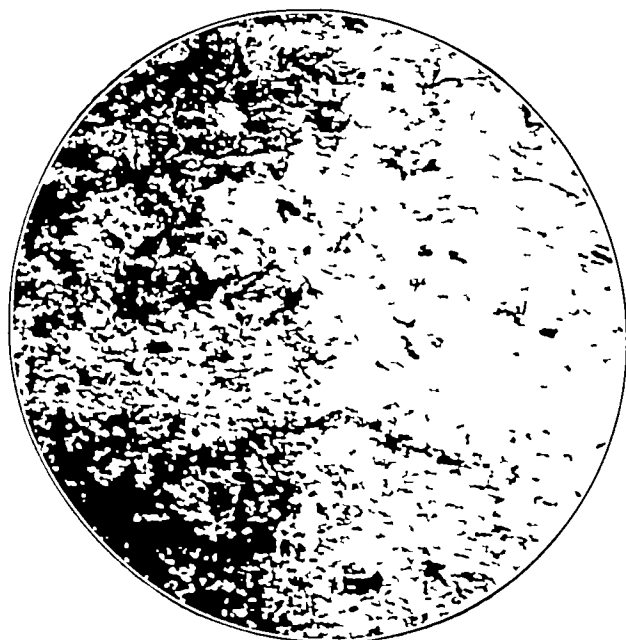


Fig. 4—Many areas in cortex show wide-spread thickening of vessel walls with masses of large glia cells staining brown to black with Weigert-Pal stain.

Westphal<sup>3</sup> called attention to cases of psychic excitement with exalted self-consciousness and peculiarly changeable grandiose ideas, and stated as his opinion that these cases are not to be classified (clinically) as paretic so long as the change in personality is not distinctly marked and progressive dementia is absent.

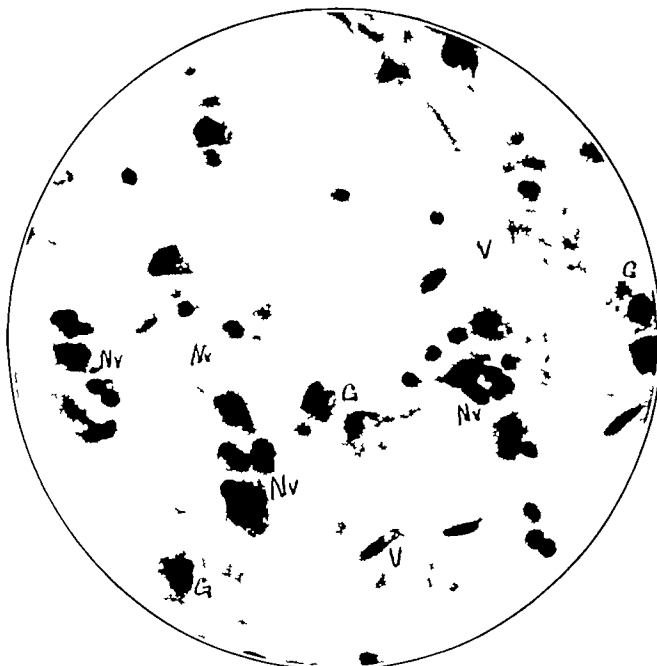


Fig. 5—Degenerated nerve cells (Nv). Sprouting capillaries (V). Glia cells with moderate increase of cytoplasm (G). (Nissl).

These patients preserved the power of observation and the general intellectual faculties were maintained. The tissue changes consisted in endarteritis of the small vessels of the brain.

#### MENTAL IMPAIRMENT IN ENDARTERITIS SYPHILITICA

In syphilitic endarteritis of the brain, the blood supply to the essential cerebral cells is restricted. Disturbance of function, cell death and finally loss of function follow. The mental pictures described by Nonne,<sup>4</sup> Alzheimer,<sup>5</sup> Jakob,<sup>6</sup> and others in patients suffering with syphilitic endarteritis include those of early dementia paralytica, of arteriosclerotic psychoses, schizophrenia, manic-depressive psychosis, paranoia and various psychoneuroses. Particular symptoms<sup>7</sup> described are excitement, plantiveness, irritability, destructiveness, hallucinations, paranoid ideas of persecution, sudden mood changes, anxiety, loss of self-control in regard to stealing,<sup>8</sup> drinking and sex, raving, confused states, absence of insight, stupor, apathy and

3 Westphal. Ueber die Differential diagnose der Dementiaparalytica, Med. Klinik 1900, number 27.

4 Nonne. Syphilis und Nervensystem chapter VIII.

5 Alzheimer. Allg. Ztschr. f. Psychiat. 66 921 922, 1909.

6 Jakob. Handbuch der Psychiatrie p. 579.

7 Freund. Virchows Arch. f. path. Anat. 232, 1921. Malamud. Ztschr. f. d. ges. Neurol. u. Psychiat. 102 778 1926.

8 Two years ago a respected middle-aged business man startled his friends by a series of petty forgeries. When I asked him why he had attempted such easily detected frauds he smiled cheerfully and replied, "I just felt good and thought I could get away with it. Theretofore a reticent man he now talked without reserve of his personal affairs. His intellect appeared to his acquaintances as good as ever. No one suspected insanity. On examination the pupils were unequal, not circular but the reaction was good to light and in accommodation there was tremor of the tongue drawing speech and hyperactive tendon reflexes. The Wassermann reaction of the blood was ———+ of the spinal fluid was ———+ globulin a trace colloidal gold curve 1123432100. Fortunately cerebral syphilis pushed him only into a minor crime and one not too repugnant to popular feelings. The prosecutors were glad to excuse him and permit him to be treated in a hospital. Autopsy would probably have shown the same sort of picture as that of J. A.

were marked later in prison and at the execution and (3) the neuropathologic examination gave no proof that dementia paralytica was present. But it must be kept in mind that early dementia paralytica may be masked in the vascular and cytologic changes of syphilitic endarteritis.

J. A. H. ——— der Psychiat. 240 1929. Nonne Max. ——— f. d. ges. Neurol. u. Psychiat. 102 778 1926. Alzheimer Al. ——— Die Syphilitischen. ——— Ztschr. f. Psychiat. 66 920 1909.



dementia. One or several of these occur in a given case, and at the beginning, as in dementia paralytica and cerebral arteriosclerosis, the only mental disturbance noted may be in the mood variations and defective inhibition of instincts.

Winkelman<sup>9</sup> has recently pointed out that the various brain diseases in which the intima of the small cerebral vessels shows proliferation, with constriction of the lumens, are characterized chiefly by mental rather than by motor or sensory disturbances in function.

#### AN INSTRUCTIVE CASE

It is my opinion, based on the earlier clinical examination and the final autopsy, that this prisoner was insane and ought to have been confined in a hospital and not executed. In view of the autopsy, it is certain that clinical and laboratory examinations just before the date set for the execution would have shown that the brain was seriously diseased.

Certain important general truths are brought into attention by this particular case.

1 Sexual perversion is not in itself a form of insanity. A sane pervert who commits a crime to satisfy his abnormal cravings is to be treated by the courts in the same way that obtains in the case of an ordinary man who rapes or murders to satisfy normal lust.

2 But a sexual pervert may become insane, just as he may develop appendicitis or a brain tumor. Indeed these psychopathic patients are always poorly balanced and tend, under small strains, to slip over into insanity. The law should then deal with them as with any insane person.

Unfortunately, being of perverted instincts, psychopathic persons are prone, when insane, to commit disgusting crimes.

Popular clamor then renders doubly difficult the duty of courts and physicians who seek unemotionally to carry out the laws which the people in their cooler moments have approved.

3 The generally accepted conception of insanity is incorrect. Even the average well informed person supposes that marked defects of memory and reasoning, with disorderly behavior, are necessary marks of insanity. Our courts still puzzle themselves over the impossible problem of "responsibility," while lawyers and witnesses sink into the murkiest depths of metaphysics when discussing it.

The truth, established on clinical facts, is that insanity of the most dangerous kind exists in abundance in which the reasoning power is well preserved and behavior for months may be perfectly orderly. Familiar examples of such forms of insanity are paranoia, mild mania or depression, epileptic fugues, and early dementia paralytica.

<sup>9</sup> Winkelman, N. W. The Importance of the Small Blood Vessels of the Brain in Psychiatric Problems, *Am. Psychiat. A.*, May 31, 1932.

4 Endarteritis syphilitica of the cerebral vessels cuts off the blood supply to the essential cells of the brain. When this disease is present in a particular patient the probability exists that serious deterioration of those cells has occurred. The presumption of insanity is so clear that the sufferer should not be considered "responsible," as the law uses that term. He should be treated in a hospital, not in a prison.

State Psychopathic Hospital

#### ROENTGEN STUDIES OF PATIENTS WITH GASTRO-INTESTINAL FOOD ALLERGY

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Roentgen studies of disturbances in the muscular tone and peristaltic activity in the gastro-intestinal tract originating from food allergy will be considered in this contribution. Previously, little attention has been paid to such disturbances. A few interesting observations, however, have been recorded. Crispin,<sup>1</sup> in 1915, in his study of a patient who had suffered from angioneurotic edema, associated with abdominal pain and hematemesis, observed by roentgen ray a lesion near the pylorus, which was found at operation to be due to angioneurotic edema. This is now recognized as an allergic condition. Eyermann<sup>2</sup> in 1927 published the only previous roentgen study of the results of deliberate feeding of an allergenic food on the function of the gastro-intestinal tract. His patient, a woman, aged 35, had had urticaria, epigastric burning, regurgitation, hiccups, alternating constipation and diarrhea, abdominal colic, pain in the upper right part of the abdomen and much intestinal gas and bloating for eight years, arising from wheat allergy. After the intentional ingestion of wheat, no disturbances were observed by the roentgen ray in the stomach or intestine, but disharmonic tonus in the colon was noted, hypotonus being present in the cecum and ascending colon and hypertonus in the transverse and pelvic colon. These conditions were absent when the patient was on a wheat free diet. In the routine examination of patients with gastro-intestinal allergy, colonic spasticity and other less frequent disturbances in function of this tract have been recorded by me<sup>3</sup> and recently by Gay.<sup>4</sup> It is of interest that Ecker and Biskind,<sup>5</sup> in 1929, recorded cinematographically the allergic reactions of a rabbit's intestine during anaphylactic shock.

That gastro-intestinal symptoms due to food allergy are common has been emphasized by several allergists. When it is remembered that mucous membrane edema and smooth muscle spasm are the main results of allergy, it is not surprising that this tract, which contains so much mucous membrane and smooth muscle, is the frequent seat of such allergic reactions.

<sup>1</sup> Crispin, E. L. Visceral Crises in Angioneurotic Edema, *Collected Papers of Mayo Clinic* 8, 823, 1915.

<sup>2</sup> Eyermann, C. H. X Ray Demonstration of Colonic Reactions to Food Allergy, *J. Missouri M. A.* 24, 129 (April) 1927.

<sup>3</sup> Rowe, A. H. (a) Food Allergy, Its Manifestations, Diagnosis and Treatment with a General Discussion of Bronchial Asthma. Philadelphia, Lea & Febiger, 1931. (b) Gastro Intestinal Allergy, *J. A. M. A.* 97, 1440-1444 (Nov. 14) 1931.

<sup>4</sup> Gay, L. P. Abdominal Allergy, *J. Missouri M. A.* 29, 7 (Jan) 1932.

<sup>5</sup> Ecker, E. E., and Biskind, M. S. Allergic Reactions of the Rabbit's Intestine During Anaphylactic Shock as Recorded Cinematographically, *Arch. Path.* 7, 391 (March) 1929.

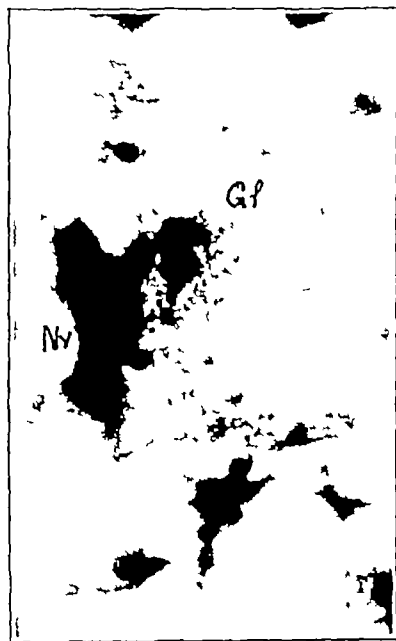


Fig. 6—A conglomerate of glia cells attached to a large nerve cell and extending far up and down. The upper half is partly out of focus.

In 1931, I<sup>3a</sup> stated that

Röntgenologists and physicians must recognize the frequency of food sensitization as a cause of gastro-intestinal symptoms when roentgen-ray studies are to be made. Since food allergy is a definite cause of colonic spasm, hyperperistalsis and other irregularities in peristalsis, the examination of a patient for the determination of actual lesions in the alimentary tract theoretically should be done when the patient's diet has been free of foods to which allergy exists for at least seven to fourteen days. It is probable that functional spasm of the cardia, pylorus, colon as well as irregular spasms in the stomach and small intestine may be due to allergy, and when any indication of such etiology exists allergy should be seriously considered.

In the administration of barium either in the meal or by enema, if milk allergy is suspected at all, a cereal or tapioca gruel or some other vehicle should be used. I realized this fact some years ago when I tried to study the gastro-intestinal tracts of such sensitive patients. Several milk-sensitive patients had vomiting or immediate pain and colic from malted milk in which the barium was suspended. It is my practice at present, if a patient is on one of my "elimination diets" for the diagnostic determination of a food allergy, always to administer the barium in a gruel made of the starch specified in the diet, i. e., rice in Diet No. 1 and corn in Diet No. 2. In this way the production of allergic reactions in the intestinal tract can be lessened during the roentgen study. However, if it is desired to determine the effects of food allergy on the function of the stomach and intestines, the food to which allergy exists can be given. There is a definite need to make further studies on the roentgen-ray manifestations of food allergy, as has been done by Eyermann.

The present study is the result of this realization of the importance of further observations of the effects of reactions from foods productive of allergenic reactions in the gastro-intestinal tract. Four patients were selected who had marked and prolonged gastric symptoms which had been relieved by the elimination of specific foods. Careful physical examinations and laboratory studies had ruled out other causes. The elimination of definite foods had relieved the symptoms and the reintroduction of the same foods in the diets had reproduced the symptoms on more than one occasion in each patient. Roentgen observations consisted of fluoroscopic examinations and roentgenograms made immediately on the ingestion of barium and three, six and twenty-four hours thereafter. Such studies were first made when the patients had been free from their symptoms for several weeks as the result of their strict adherence to their "elimination diets." The barium was administered in a corn meal gruel. About two or three weeks after this initial study a second series of observations was made after the patients had taken milk or milk and eggs for one or two days. The barium was also administered in malted milk, to which each patient was sensitive. Marked disturbances in muscular tone and motility resulting from probable allergic reactions in the gastro-intestinal tissues were observed in each of the four patients. These will be described in the following reports as recorded by Dr. F. B. Mandeville of the Peralta Hospital to whom I am indebted for his roentgenologic observations and interpretations.

**CASE 1—History.**—A man aged 40, had had distention, bloating and fullness after most meals associated with heartburn, sour regurgitation and a sensation of a lump in the epigastrium for the last three years. These symptoms had occurred also at one hour after eating and had persisted until the following meal. There had never been any nausea or vomiting. Constipation had gradually increased in the last three or four years. During this period he had taken physic very weak or two and had noted a heavy toxic feeling with a cold, swollen face and the bowels became badly consti-

stipated. Up to four years ago there had never been any indigestion or constipation. His persistent symptoms worried him a great deal because his father had died of cancer of the stomach at the age of 40. The patient had found that starchy foods increased his gastric symptoms. Cabbage had always produced gas on the stomach. He had never suffered from hives, eczema, hay fever or asthma.

His family history was negative for allergy. His past history was unimportant. Skin reactions to wheat, milk and eggs by the scratch and intradermal methods were negative on four different occasions during the first ten months. His physical examination was negative. Hypo-acidity was found after a test meal of 7 per cent alcohol. The patient was given "elimination diets" 1 and 2 minus lettuce, plus grapefruit. Fifteen drops of dilute hydrochloric acid before and after meals were given. The symptoms were much relieved. The acid was discontinued. Relief persisted during the following month, and the foods in diet 3, together with fish, potatoes and oranges, were gradually added. The bowels began to move every other day and were formed. Then milk and its products



Fig. 1 (case 1)—Hyperperistalsis, pylorospasm, hypermotility and gastric retention after the addition of allergenic milk to the diet. Original complaint: sour stomach, belching, gastric distention and discomfort. In the illustrations, A and B show the result of the elimination diet; C and D show the result of adding milk in figures 1 and 4 and of milk and eggs in figures 2 and 3. A and C show the condition at three hours, B and D at six hours.

were added, and in two weeks eggs were tried. The old symptoms returned and during the year since then he has determined that milk, eggs and wheat have usually reproduced his old symptoms in one or two days.

**Roentgen Studies.**—The first examination was done when the patient had been free from symptoms and had been on his "elimination diet" for several weeks. Because of his known sensitization to milk, the barium was administered in corn meal gruel. The results of this study were as follows:

Combined fluoroscopic and roentgenographic examination after the ingestion of a barium meal demonstrated the esophagus to be normal. The stomach was orthotonic in type with its greater curvature 3 inches above the crest of the ilium. Peristalsis was two cycle in type and uninterrupted. No defects were noted on the walls of the stomach or duodenal bulb. The duodenal bulb was small and filled with difficulty. There was no deformity. The barium left the stomach readily. An immediate film revealed it in the upper jejunum.

At three hours the barium was in the terminal ileum. There was a slight residue in the stomach and in the second and third portions of the duodenum and jejunum.

At six hours there was no retention in the stomach. The barium was in the ascending colon and the remainder was in the terminal ileum.

At twenty-four hours the barium was distributed throughout the large intestine from the cecum to the rectum.

**Conclusion** There was no evidence of pathologic change of the gastro-intestinal tract.

The second examination was carried out seven days later. The patient had taken milk and a moderate amount of cream for one day before the second examination, and the barium was administered in malted milk. During the second examination after he had taken milk for one day the patient had the same fullness and distress in the epigastrium which had bothered him for three years before our control. The roentgen demonstration of marked three hour and six hour retention with retarded intestinal motility explains the cause of such discomfort.

The esophagus was normal. The stomach was orthotonic in type. Peristalsis was two cycle in type, the peristaltic waves

**Conclusion** On the immediate examination there was hyperperistalsis and pylorospasm.

At three hours there was moderate residue in the stomach and slight intestinal hypermotility.

At six hours there was retention in the stomach and definite intestinal hypermotility.

None of these conditions were present on the previous examination when the patient was on a milk-free diet.

**Comment**—The marked gastric retention, pylorospasm and hypermotility can best be explained as the results of milk sensitization. The hypo-acidity indicated possible lack of digestive function as a cause. However, the symptoms recurred only with the ingestion of milk, eggs and wheat and not with meats and other foods in the patient's "elimination diet." Starch indigestion was ruled out because of his ability to take liberal amounts of rice, corn and potatoes. The possible effect of the patient's concern about cancer needs to be considered. The relief and reproduction of his symptoms, however, by the withdrawal and ingestion of the specific foods, contradicts the possibility of nervousness as a cause.

**CASE 2—History**—A woman, aged 25, had had a sensation of fullness in the epigastrium and a generalized abdominal distress after meals for ten years. There had also been a soreness and a dull aching in the lower right quadrant for an equal period, which had been diagnosed as chronic appendicitis. Nausea but no vomiting had frequently occurred. There had been definite constipation of the bowels most of the time for many years. Headaches characterized by severe pain in the top of the head and the back of the neck associated with a toxic feeling and relieved by a physic had recurred frequently. As a child she had had frequent attacks of colicky pain throughout the abdomen. For ten years she had had a persistent type of eruption on the face, especially around the mouth and on the chin. This was aggravated by constipation and when she ate rich foods. She had no food dislikes but knew that red cabbage, lima beans, bread and pastries disagreed with her. There was no history of hay fever, asthma, eczema or hives. However, there had been a nasal congestion and watery discharge every morning for several years. The family history was negative for allergy, and her previous history was unimportant.

Physical examination was negative except for a marked acne-like eruption around her mouth and on her forehead, chin and slightly over the cheeks. Moderate tenderness was elicited over the lower right quadrant. Normal gastric acidity was found. Skin testing was negative with all types of food by the scratch method and with the intradermal method with extracts of wheat, milk and eggs.

With the use of the "elimination diets" it has been demonstrated during the last year and a half that a wheat, milk, egg, orange, apple and cabbage free diet relieves her from all her gastric symptoms, her appendix-like pain and her facial eruption. She likewise has been practically free from constipation.

**Roentgen Studies**—The first examination was carried out when the patient had been free from symptoms for several weeks as a result of the elimination of the specific foods already mentioned. The barium was administered in corn meal gruel because of the patient's known allergy to milk. The results of this study were as follows:

Fluoroscopic and roentgenographic examination of the gastro-intestinal tract after the ingestion of a barium-gruel mixture demonstrated that barium entered the stomach readily and progressed to the pylorus immediately. The stomach was ptosed, with its greater curvature 4 inches below the crest of the ilium in the erect position. The stomach was J shaped, and peristalsis was of the two cycle type and uninterrupted. Peristalsis was noted immediately on the entrance of the barium into the stomach. The waves were moderate in depth and well within normal limits. The duodenal bulb filled out immediately and no defect or tenderness was noted. The second and third portions of the duodenum were slightly dilated with barium, and there was some reversed peristalsis starting in the third portion of the duodenum near the ligament of Treitz.

At twenty minutes there was a considerable amount of barium in the pelvic jejunum.

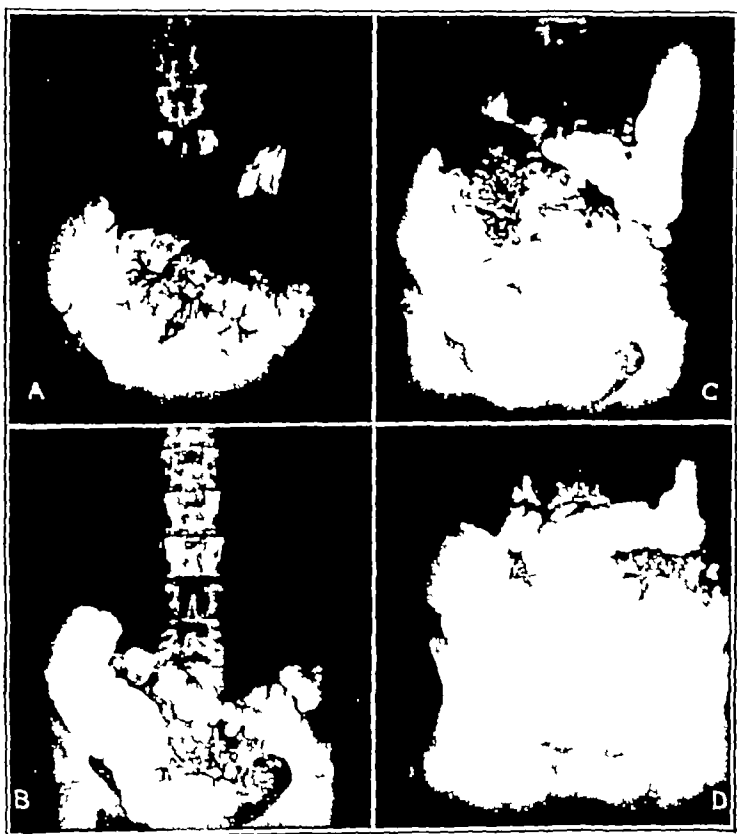


Fig. 2 (case 2)—Gastric retention after the addition of allergenic milk and eggs. Original complaint: epigastric distention, abdominal distress, fullness in the lower right quadrant, nausea, chronic constipation and headaches.

were deep, and there was definite hyperperistalsis noted particularly during the first part of the fluoroscopic examination. There was a definite pylorospasm. The duodenal bulb was filled with difficulty. It was visualized in the prone position and was small and regular. The greater curvature of the stomach was 3 inches above the crest of the ilium and there were no filling defects on the walls of the stomach or duodenal bulb. The barium left the stomach slowly.

At three hours the barium had progressed to the midportion of the ascending colon. There was some barium in the jejunum and a moderate amount in the ileum. At least half of the barium meal was retained in the stomach.

At six hours there was a small amount of barium in the stomach and duodenum. The barium meal had progressed to the proximal portion of the descending colon. There was a considerable residue in the jejunum and ileum.

At twenty-four hours the barium was distributed throughout the large intestine from the cecum to the rectum. The lumen of the appendix was filled with barium. There was no point tenderness over the appendix.

At one and one-half hours there was moderate retention in the stomach and duodenum, and the barium was in the distal ascending colon, the greater portion in the ileum.

At three hours the barium had progressed to the splenic flexure. There was very slight retention in the stomach. The colon was generally ptosed, with the hepatic flexure at a level of the crest of the ilium.

At six hours the barium was in the distal transverse colon and there was some residue in the terminal ileum. There was no retention in the stomach.

At twenty-four hours there was a moderate amount of barium in the cecum, the ascending and transverse colon and a stringlike shadow of barium in the splenic flexure and descending colon and a few flecks of barium in the rectum. The appendix was not visualized.

**Conclusion** There was ptosis of the stomach and small and large intestine. Reversed peristalsis in the second and third portions of the duodenum and hypermotility were especially noted on the one and one half hour film, otherwise the examination was negative.

The second examination occurred two and a half months later, after the patient had taken milk and eggs for several days. Her symptoms returned after several days, indicating that a moderate tolerance had developed to her allergenic foods. The barium was administered in malted milk. The results of this examination were as follows:

Reexamination of the gastro-intestinal tract showed that the esophagus was normal. The stomach was J shaped, with its greater curvature below the crest of the ilium. Peristalsis was two cycle in type and uninterrupted. The tone was good and the duodenal bulb was clearly outlined. The second and third portions of the duodenum were again moderately dilated. The stomach emptied itself readily. There was no point tenderness.

At three hours there was retention of almost half the barium meal in the stomach and duodenum. The barium had progressed to the hepatic flexure. At six hours there was retention of approximately one fourth of the barium meal in the stomach and duodenum. The barium had entered the descending colon. The transverse colon was spastic.

At twenty-four hours there was no retention in the stomach. There was a large amount of barium distributed throughout the large intestine from the cecum to the rectum, especially in the proximal part of the ascending colon, and the descending and sigmoid colon as compared with the observations in the first examination. The transverse colon was spastic, and there was a stringlike shadow in the sigmoid.

**Conclusions** There was retention in the stomach at three and six hours on the second examination.

**CASE 3—History**—A man, aged 43, seven years before had developed pain in the epigastrium associated with nausea and vomiting. Burning and marked heaviness in the stomach were present. The results of the roentgen examination are taken from the roentgenologist's report. There was moderate spasm of the pylorus. The stomach itself seems negative for evidence of organic pathology. The duodenal cap is regarded with considerable suspicion as being involved with an ulcer, although the definite ulcer niche could not be located. The tract seems otherwise negative. The Sippy diet was tried for about three months with questionable improvement so that a gastro-enterostomy was resorted to. A detailed description of the conditions found at operation is not available. Soon after his operation he began to vomit again, and a second operation was done six months later to enlarge the opening. Vomiting returned a few days after the resumption of food and continued for many months. Finally he gradually determined that the nausea and vomiting were influenced by certain foods, such as milk, eggs, pineapple and coffee. A meat and vegetable diet gave him definite relief and he had found since then that milk, cream or eggs eaten for a few days always produced nausea, cardiac irregularity, vomiting, marked nervousness and palpitation lasting for several days. For the last two years he had been subject to severe recurrent headaches and attacks that now they were recurring once or twice a week. In the past year various joints of the body had occurred and in the past year no other allergic disturbances had ever been present.

He had had indigestion in childhood and fainting attacks which were influenced by constipation. All kinds of examinations and tests, including spinal puncture, gallbladder studies and stool examinations as well as various diets and three abdominal operations, had been without avail.

His family history revealed that his mother had had headaches, an irregular heart, indigestion and fainting spells nearly identical with those symptoms of the patient's. One of the patient's children has severe asthma. Physical examination and laboratory tests were negative. Skin tests with all types of food by the scratch method and with the most important foods by the intradermal method were negative.

With 'elimination diets' 1, 2 and 3 plus potato his symptoms have been absent. He has found on several occasions that milk and eggs especially produce nausea, vomiting, palpitation and nervousness. When milk and eggs were taken for three days previous to the second roentgen examination recorded here, it took about four days to recover from the marked nausea and about three weeks to overcome all the resulting digestive and toxic symptoms.

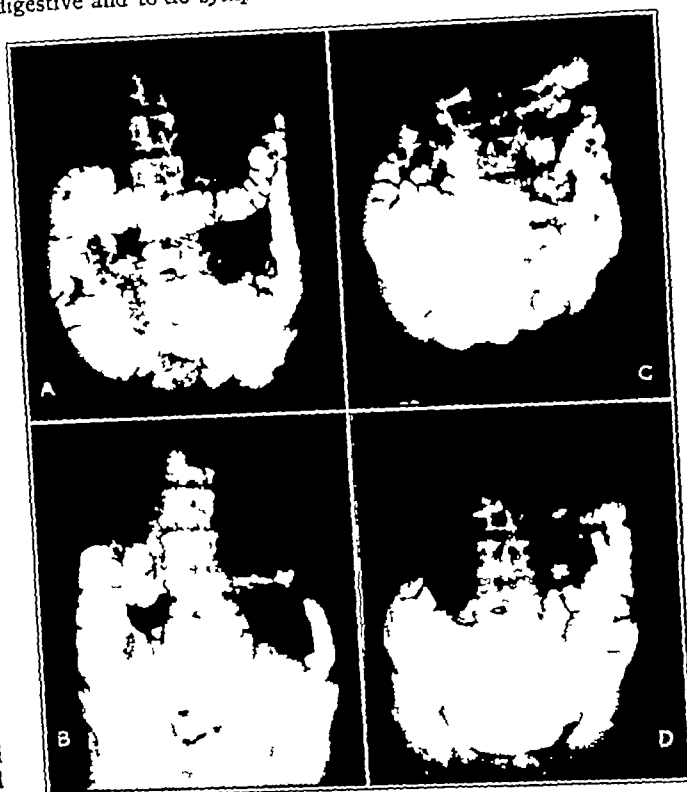


Fig 3 (case 3)—On elimination diet, roentgen study showed patent gastro-enterostomy and hypermotility. After addition of milk and eggs, gastric and duodenal retention and decreased intestinal motility resulted. Two gastro-enterostomies had failed to relieve nausea, belching and vomiting which were controlled by elimination diets.

**Roentgen Studies**—The first examination was made when the patient had been free from symptoms because of his adherence to his elimination diet for several weeks. The barium was given in corn meal gruel because of his known allergy to milk. The results of this study were as follows:

Fluoroscopic and roentgenographic examinations after the ingestion of a barium meal demonstrated that the esophagus was normal. The stomach was J shaped, with its greater curvature at a level of the crest of the ilium. The barium left the stomach immediately through the gastro-enterostomy opening and filled the loops of the jejunum situated in the lower pelvic region. There was no point tenderness over the stomach and pressure exerted over it filled the pylorus and the duodenal bulb and the second and third portions of the duodenum. No ulcer niches were seen.

At three hours the barium had progressed to the upper part of the rectum. There was a small residue in the jejunum and ileum and the remainder was distributed throughout the large intestine. There was a small fleck of barium in the stomach.

At six hours the barium was distributed throughout the large intestine and there was some residue in the terminal ileum

At twenty-four hours the barium was distributed throughout the large intestine from the cecum to the rectum. The large intestine was moderately spastic.

**Conclusions** 1 There was no definite evidence of gastric or duodenal ulcer or a malignant condition of the stomach at this time

2 There was a patent gastro-enterostomy opening

3 Intestinal hypermotility was noted during the immediate, three and six hour examinations

The second examination was done fifteen days later. The patient had taken milk and eggs for three days before this study and the barium was given in malted milk. The results of this examination were as follows

Reexamination after a barium meal showed that the esophagus was normal. The stomach was J shaped, with its greater curvature at the crest of the ilium. The barium left

2 The marked hypermotility in the large intestine noted in the first examination was no longer present

3 There was a stringlike shadow of barium in the sigmoid region and a moderate spasticity of the large intestine suggesting an irritable colon

**Comment**—The three hour and six hour retention probably resulted from milk and egg allergy in this patient in spite of the gastro-enterostomy. It is best explained by allergic reactions to the specific foods producing a mucosal edema or smooth muscle spasm which interfered with normal peristaltic activity in the small intestine and possibly in the stomach itself

There is a definite question about the original presence of a duodenal ulcer. The roentgen report in 1924 was indefinite and no detailed operative account at that time is on record. No evidences of healed ulcer are now evident. The immediate recurrence of vomiting after both operations indicates that food allergy had been the probable cause of all the symptoms and that both operations might have been avoided

**CASE 4—History**—A man, aged 41, had had heaviness and discomfort in the epigastrium and in the upper right quadrant radiating up into the right lower part of the chest intermittently for two years. Milk especially increased these symptoms. Eggs for many years had upset his digestion. Oranges, lemons and berries had caused sour stomach. Headaches had never occurred, though he often had a dull, heavy, toxic sensation. The bowels had always been constipated. Frequent canker sores, a coated tongue and gums and nasal congestion, especially on arising, had recurred for years. No other allergy was elicited in the family or personal history. His past history was unimportant

Physical examination, blood, urine and gastric analyses were negative except for a sallow complexion and a moderate six hour gastric retention. The gallbladder filled and emptied normally after the oral administration of phenoltetraiodophthalein. Skin tests by the scratch method with all types of foods and all important inhalants were negative and were also negative by the intradermal method with wheat, milk, eggs and other important foods

With "elimination diets" 1, 2 and 3 minus lettuce, plus potato, the pain and fulness in the upper right quadrant and epigastrium and the radiation of pain into the lower right part of the chest disappeared. The bowels became normal—the "best they had been in twelve years." The toxicity, which had bothered him especially in hot weather, was eradicated. The indigestion, canker sores and nasal congestion were relieved. But "the minute he gets off his diet he gets into trouble"

**Roentgen Studies**—After the patient had been on the proper "elimination diet" for six months he agreed to allow me to study his gastro-intestinal tract while he was on his "elimination diet" and free from his former symptoms for many weeks. Because of his known sensitization to milk, the barium was given in corn meal gruel. The results of this study were as follows

The esophagus was normal. The stomach was J shaped, with its greater curvature 1 inch below the crest of the ilium. The tone was good, and peristalsis was two cycle in type and uninterrupted. The duodenal bulb was normal. No tenderness was noted

At three hours there was a small amount of barium in the pyloric region and duodenum and strings of barium in the stomach. The barium was distributed throughout the jejunum and ileum and there was none in the large intestine

At six hours there was no retention in the stomach, duodenum or jejunum. There was some barium in the terminal ileum and it extended to the distal descending colon. The barium shadows in the transverse and descending colon were stringlike in appearance

At twenty-four hours the barium extended from the cecum to the rectum. There were stringlike shadows in the transverse and descending colon which suggested an irritable colon

**Conclusions** 1 There was no evidence of gastric or duodenal ulcer or a malignant condition

2 Hypermotility in the large intestine at six hours and stringlike shadows in the transverse and descending colon, with lack of haustration, suggested a possible irritable colon

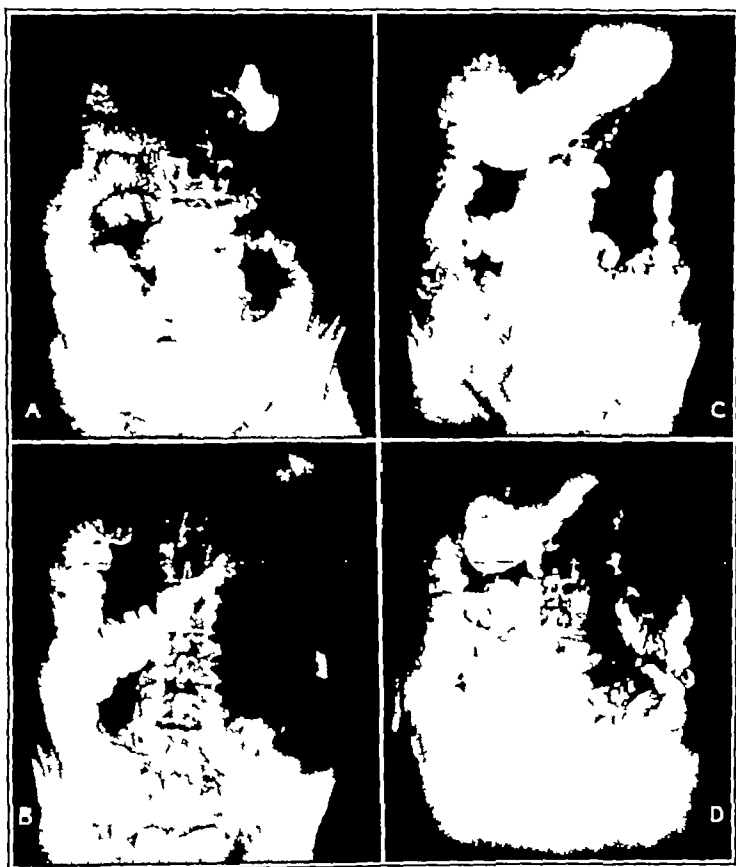


Fig. 4 (case 4)—Gastric retention after addition of allergenic milk. Original complaint: heaviness and discomfort in the epigastrium and upper right quadrant, sour stomach and constipation

the stomach immediately through the gastro-enterostomy opening and filled the loops of the jejunum in the lower pelvic region. There was no point tenderness in the pyloric region, and the duodenal bulb and the second and third portions of the duodenum were filled. Immediate films were similar to those of the first examination

At three hours there was a moderate residue in the stomach and duodenal bulb and in the jejunum and ileum. The barium had progressed to the distal ascending colon

At six hours there were several flecks of barium in the stomach and the duodenal bulb. There was a moderate residue in the jejunum and marked residue in the ileum. The barium had progressed no farther in the large intestine than in the three hour film. It was in the distal ascending colon

At twenty-four hours the barium was distributed throughout the large intestine from the cecum to the upper part of the rectum

**Conclusions** 1 On comparison with the previous examination there was now noted a retention in the stomach and duodenum at three hours and six hours and a decreased motility in the entire small intestine



The second examination was carried out two days later, after the patient had taken milk for one day. On the morning of this examination the old digestive distress had returned. The barium was given in malted milk. The results of this examination were as follows:

A second meal showed the esophagus, stomach and duodenal bulb to be within normal limits. Peristalsis was two cycle in type and peristaltic waves were hyperactive. The stomach was below the crest of the ilium and the tone was good.

At three hours there was retention of two thirds of the barium meal in the stomach. The barium had progressed to the ileum but had not reached its terminal portion. There was very little barium in the jejunum.

At six hours there was retention of approximately one third of the barium meal in the stomach and there was barium in the duodenal bulb. There was a small amount of barium in the jejunum. The greater portion of the barium was in the terminal ileum, and it had entered the cecum. The second barium meal had apparently progressed to meet the first barium meal, which was still distributed throughout the large intestine.

**Conclusion**—There was retention at three and six hours in the stomach on the second examination. There was no hypermotility in the small intestine at three and six hours. The second immediate examination of the stomach showed hyperperistalsis.

**Comment**—This patient presented a number of symptoms, which were probably due to food allergy since they were relieved by the elimination of specific foods and recurred with the reintroduction of such foods in the diet. The gastric symptoms were especially disturbing. Pain and soreness in the upper right quadrant associated with definite sallowness of the skin suggestive of a mild icterus indicated possible hepatic allergy. Canker sores and coated gums and tongue are recognized as due to food allergy in certain patients and were relieved in this patient by his "elimination diet."

Because of the patient's limited time in the city it was necessary to conduct his second series of roentgen studies before the barium from his first series had been entirely evacuated. However, the results in this case check with those of the other three and it is reasonable to suppose that the barium retained in the colon had no effect on the gastric function.

The following deviations from the roentgen examinations when the patients were on "elimination diets" which controlled their symptoms were noted when milk or eggs were added to their diets:

1 Gastric retention was observed in each of the four patients. This was marked in three hours and very definite in six hours. In case 1 there was definite evidence of pylorospasm. In the other cases it could have been present to a degree difficult to visualize. In all the cases and especially in case 3, in which gastro-enterostomy was present, some disturbance in peristalsis interfering with the gastric or intestinal gradient best explains the gastric retention. Such disturbance could be the result of localized or generalized mucosal edema or smooth muscle spasm arising from allergic reactions due to milk or eggs.

2 In each patient barium was present in the duodenum and jejunum in three and six hours. This was to be expected with the gastric retention and was due to the same causes that were responsible for the residues in the stomach.

3 In case 1 definite hypermotility was observed in three and six hours. It is impossible to say that this was definitely due to allergy. However, diarrhea is not an infrequent manifestation of food allergy in children and in adults.

4 Spastic colons were observed in cases 1, 2 and 3 during the second studies. Such spasm could readily be explained by an allergic reaction of the smooth

muscle in the colon. It is my opinion that constipation is frequently due to food allergy resulting from colonic spasm and that when it is accompanied by a mucosal reaction, mucous colitis or an irritable bowel may result.<sup>6</sup>

It is interesting that long standing constipation in case 1 and especially in case 2 was relieved by "elimination diets" only to return when milk and eggs were taken again.

It is my opinion that these conditions with their accompanying symptoms were probably due to food allergy for the following reasons: (a) They were absent when milk and eggs were excluded from the diet. (b) The symptoms reappeared when milk or egg had been added to the diet for from one to three days. Patient 3 had definitely determined before consulting me that these two foods along with a few others invariably produced nausea, vomiting and gastro-intestinal soreness for which gastro-enterostomy had been done without relief. (c) Such relief and reproduction of symptoms in each patient had occurred on two or three occasions by the withdrawal or taking of these specific foods.

It is realized that doubt may arise about food allergy as the cause of the gastro-intestinal symptoms and roentgen observations.

(a) It is possible that the disturbances resulting from the introduction of milk or eggs could be due to impaired digestion. Thus, patient 1 had definite hypo-acidity. However, hydrochloric acid therapy and strong citric acid drinks in themselves were unavailing in the control of his distress. In three patients, large doses of trypsin in capsules coated with phenyl salicylate and strong acid therapy did not make possible the taking of milk without the appearance of the former discomfort. It is realized that milk has a slightly longer gastric emptying time than gruel. However, definite six hour residues have never been a common finding in the thousands of patients who have been studied with the roentgen ray after the taking of barium or bismuth in milk vehicles. Thus, in my opinion, allergy best explains the definite residues that were found in these four patients and even in the one who had a well functioning gastro-enterostomy when on his "elimination diet."

(b) It is known that nervousness in its various forms may disturb gastro-intestinal function. However, six hour residues are not commonly observed in patients, many of whom are nervous with their original roentgen studies. All four of these patients, moreover, had had previous examinations, and many studies had been made in cases 2 and 3. Thus it is not logical to suppose that in each of these cases the gastro-intestinal disturbances and especially the gastric retention could have been due to nervous reactions. This explanation of nervousness as a cause of allergic reactions in the gastro-intestinal

6 When the patients were free from their symptoms during their initial roentgen studies certain deviations from the normal conditions in the gastro-intestinal tract were found. Slight residue in the second and third portions of the duodenum was noted in case 1. Ptosis of the stomach, small intestine and large intestine in case 2 was observed. Some reversal or peristalsis in the duodenum probably due to this ptosis was also present though no symptoms from this ptosis or duodenal disturbance were experienced. In case 3 there was no evidence of ulcer or a malignant condition. However hypermotility in three and six hours was marked the barium having progressed well into the sigmoid in three hours and into the rectum in six hours owing undoubtedly to the large gastro-enterostomy. No definite symptoms were experienced by the patient from such hypermotility. In case 4 moderate hypermotility in the large bowel and lack of definite haustration suggested an irritable bowel syndrome indicative of which were not present when this patient was on his "elimination diet." It is necessary to emphasize that these abnormal and definite gastro-intestinal symptoms were not accompanied by patients had been relieved of their original complaints for several weeks by the use of elimination diets.

tract reminds one of such an explanation of asthma, angioneurotic edema, migraine and other allergic disturbances which unfortunately have held sway until recent years

(c) The fact that definite skin reactions by the scratch and intradermal tests to milk or eggs were not present in any one of these four patients would argue against allergy in the minds of some physicians. Slight erythema and a suggestive wheal to milk were present in two patients, but such reactions are indefinite and of little value. This absence of positive reactions in food sensitive patients has been frequently observed by Alexander, Schloss, myself and others. It is especially frequent in adult patients and particularly in gastro-intestinal allergy, migraine and angioneurotic edema due to food sensitizations. The explanation of this difficulty in demonstrating skin reactions to foods causing allergic symptoms is difficult. It may be due to localized allergy in the gastro-intestinal tract even in definite parts of this tract, or it may be due to a temporary desensitization or a hyposensitization of the cells of the skin. Rinkel recently suggested to me that such negative reactions might be due to a condition similar to that in the skin when patch tests and not scratch or intradermal tests are positive. This difficulty in demonstrating positive skin reactions to foods, especially in adults, to my mind accounts for the long delay in recognizing the frequency of food allergy.

As stated before, these four patients were selected because of their marked gastric symptoms, which had been relieved by the elimination of specific foods without other medical measures. The occurrence of definite gastric retention had not been anticipated. However, moderate six hour retention had been observed in case 4 at my initial examination six months before and in other patients with gastro-intestinal allergy. That such residues had not been observed in the other three patients when they were first studied some months before the present investigations was probably due to the fact that it has been my custom for several years to put my patients suspected of gastro-intestinal allergy immediately on "elimination diets" and to conduct roentgen studies several days after such diets have been started. Moreover, the barium has been given to such patients in corn meal or tapioca gruel instead of in a milk vehicle.

It is my opinion that many mild disturbances in the gastro-intestinal tract arising from food allergy exist in comparison to the marked ones studied in these four selected patients. The roentgen demonstration of such mild dysfunctions might be difficult as compared with those in this study. Moreover, this study has been made on patients with predominating gastric symptoms. It is planned to carry out roentgen studies on a group of patients with colonic disturbances due to food allergy to complement and extend the former report of Eyer-mann.<sup>2</sup>

#### CONCLUSIONS

1 Gastric retention arising from probable food allergy has been demonstrated by roentgen studies

2 Hypermotility and colonic spasticity resulting from such allergy has also been shown by the roentgen ray

3 Food allergy as a cause of gastric retention and other peristaltic disturbances in the small and large intestine must be kept in mind by gastro-enterologists and roentgenologists

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## POISONING FROM DRINKING RADIUM WATER

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AND

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NEW YORK

Radioactive salts taken internally in the smallest traces are detrimental to health and fatal to life. This has been definitely proved by the work of Martland and his co-workers,<sup>1</sup> St. George, Gettler and Muller,<sup>2</sup> Hoffman,<sup>3</sup> Castle and Drinker,<sup>4</sup> Flinn<sup>5</sup> and the U. S. Department of Labor,<sup>6</sup> especially in connection with the series of radium watch dial workers in New Jersey.

The case to be described in this paper is interesting because it is the first one on record to be diagnosed



Fig. 1—Autophotographic appearance of femur

correctly as radium poisoning, caused by drinking radium water, and in which the autopsy and analysis of the tissues corroborated the diagnosis.

From the chemical laboratories of Bellevue Hospital, the Chief Medical Examiner's Office, and Washington Square College, New York University.

1 Martland, H. S., Conlon, Philip, and Knief, J. P. Some Unrecognized Dangers in the Use and Handling of Radioactive Substances, with Special Reference to the Storage of Insoluble Products of Radium and Mesothorium in the Reticulo-Endothelial System, *J. A. M. A.* 85: 1769 (Dec. 5) 1925. Martland, H. S. Microscopic Changes of Certain Anemias Due to Radioactivity, *Arch. Path. & Lab. Med.* 2: 465-472 (Oct.) 1926. Reitter, G. S., and Martland, H. S. Leukopenic Anemia of the Regenerative Type Due to Exposure to Radium and Mesothorium, *Am. J. Roentgenol.* 16: 161-167 (Aug.) 1926. Martland, H. S. Occupational Poisoning in Manufacture of Luminous Watch Dials, *J. A. M. A.* 92: 466-552 (Feb. 9) 1929. Martland, H. S., and Humphries, R. E. Osteogenic Sarcoma in Dial Painters Using Luminous Paint, *Arch. Path.* 7: 406-417 (March) 1929.

2 St. George, A. V., Gettler, A. O., and Muller, R. H. Radioactive Substances in a Body Five Years After Death, *Arch. Path.* 7: 397-405 (March) 1929.

3 Hoffman, F. L. Radium (Mesothorium) Necrosis, *J. A. M. A.* 85: 961 (Sept. 26) 1925.

4 Castle, W. B., Drinker, Katherine R., and Drinker, C. K. Necrosis of the Jaw in Workers Employed in Applying a Luminous Paint Containing Radium, *J. Indust. Hyg.* 7: 371 (Aug.) 1925.

5 Flinn, F. B. Radioactive Material an Industrial Hazard? *J. A. M. A.* 87: 2078-2081 (Dec. 18) 1926.

6 U. S. Department of Labor Bulletin. Radium Poisoning, 1929.

**History**—E M B, a man, aged 52, weighing about 110 pounds (50 Kg), markedly emaciated and anemic, was admitted to the hospital<sup>7</sup> and treated for necrosis of the jaw. He had been drinking a water (said to be "Radithor") for about five years. This water is said to have contained 2 micrograms of radioactive substances in each 2 ounce (60 cc.) bottle, and the patient had consumed about 1,400 bottles.

The patient was in the hospital a few months, and during this time the air he expired was found to be radioactive.<sup>8</sup> Four weeks before death a part of the necrotic jaw was removed by operation. The condition of anemia and emaciation increased continually, and at death he weighed only 90 pounds (41 Kg).

TABLE 1—Total Amount of Radium in Bones and Tissues as Determined by the Emanation Method

Tissues	Total Weight	Grams Used for Ashing	Per Cent Ash	Grams of Ash From Entire Tissues	Micro grams Ra per Gm Ash	Micro grams Ra in Entire Body
Femur		10.5	51.3		0.0092	
Vertebrae		12.5	50.8		0.0342	
Rib		8.4	51.5		0.0039	
Jaw bone		0.8	44.2		0.0076	
Teeth		1.5	53.4		0.0149	
Average			50.2		0.0139	
Total skeleton	10,500*		50.2	5,271.00*	0.0139*	73.27*
Heart	250	50	0.9	2.25	0.0008	
Spleen	150	100	0.87	1.30	0.0009	
Kidneys	250	145	0.64	1.80	0.0040	
Liver	1,200	425	0.80	9.60	0.0012	
Lungs	600	540	0.82	4.92	0.0008	
Muscle, blood and remaining tissues	23,000*			224.24*		
Average			0.8		0.0016	
Total soft tissues	30,450*		0.8	244.11*	0.0016*	0.39*
Total micrograms Ra in entire body						73.66*

\* Estimated

The autopsy<sup>9</sup> revealed necrosis of the jaw bones, swollen kidney cortex, cerebral abscess of the right temporosphenoidal lobe, moderate coronary sclerosis, moderate nodular sclerosis of the aorta, and marked hyperplastic bone marrow (regenerative type) (bright red bone marrow). The cause of death was necrosis of the jaw, abscess of the brain, secondary anemia and terminal bronchopneumonia. In order to prove the nature of the poison causing these conditions the heart, liver, lungs, spleen and kidneys, and portions of the femur, vertebrae, ribs, jaw bone and teeth were taken for analysis.

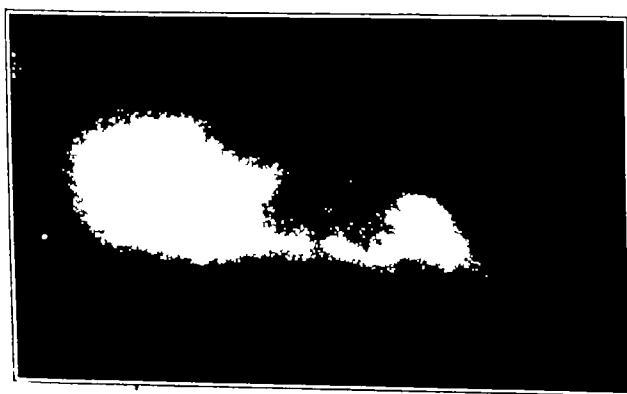


Fig. 2—Radioactivity shown by jaw bone.

**Preparation of Tissues**—The separate portions of the tissues as removed from the body were weighed and then ashed in an electric muffle. The ashes thus obtained were weighed and the percentage of ash then calculated. The total weight of skeleton, muscle, blood and the like was estimated. All values obtained are given in table 1. The various ashes were examined by means of the electroscop.

<sup>7</sup> Doctors H. H. and New York, Service of Dr. Joseph S. Wheelwright. The patient was under the care of Dr. F. B. Flann of Columbia University, New York, and Dr. Charles A. M. Chief Medical Officer, New York City.

**Electroscopic Tests**—The Lind electroscop was used throughout this work. The normal leak was first determined, by averaging several readings, and found to be 2,880 seconds for ten divisions on the scale. The bone and tissue ash were now successively introduced into the lower chamber of the electroscop, and the time for a ten division leak was determined. The time of leak was always read with the electroscop leaf between 6 and 8 of the scale, making the several readings strictly comparable. The results are indicated in table 2. The figures show an enormous reduction in the leakage time, produced by the bone ashes, indicating that they were strongly radioactive. The leakage time for the ashes of the soft tissues was much less, but still a decided decrease over the normal leak, indicating that the soft tissues also contained some radioactive substance. Bone and tissue ashes of nonradioactive cases gave practically the same values as the natural leak.

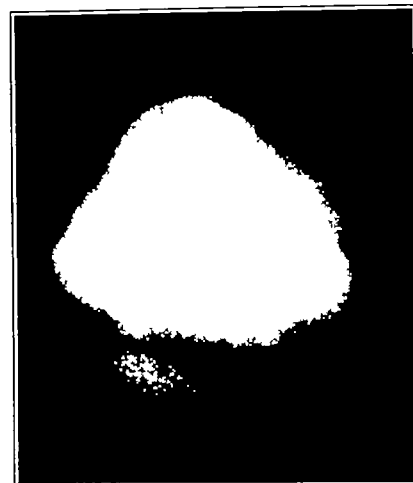


Fig. 3—Image of vertebra.

**Photographic Method for Detection of Radioactivity**—All operations were conducted in a dark room. The photographic films were wrapped and sealed in black photographer's paper. The various bone and the tissue ashes were placed on these films and were allowed to remain standing in this manner for ten days. After this period the films were developed and printed. The results are shown in the accompanying reproductions of the autophotographs. The images thus obtained are due to the beta and gamma rays emitted by the radium present in the bones and tissues. All the bones of this case,

TABLE 2—The Electroscopic Leaks Obtained for Bone Ash and Soft Tissue Ash

Material Tested	Grams Used	Leak in Scale Division	Time in Seconds
Normal leak	Control	10	2,880
Femur	5.0	10	95
Vertebrae	0.0	10	24
Rib	4.0	10	268
Jaw bone	2.5	10	76
Teeth	0.5	10	255
Heart	0.2	10	2,360
Spleen	0.8	10	1,870
Kidneys	0.8	10	1,960
Liver	0.8	10	1,650
Lungs	0.8	10	1,400

examined by the photographic method showed that they were strongly radioactive. The soft tissues were only weakly radioactive.

**Quantitative Determination of Radium Content of Bones and Tissues**—The Lind electroscop which was used for the measurements, was calibrated by the emanation method.

A sample of carnotite ore weighing 1 Gm and containing 1.51 per cent of uranium was placed in a 200 cc. round bottom flask into which 100 cc. of 1.1 nitric acid (saturated with barium nitrate) was added. The contents of the flask were then boiled, so as to expel all the emanation. With the content of the flask still at the boiling temperature, the flask was sealed and the emanation was allowed to collect for a period of one week. After this time, the sealed flask was connected with a purifying train (to remove carbon dioxide acid spray, and moisture) and the emanation was driven over into a previously evacuated ionization chamber. The emanation was allowed to stand in the chamber for three hours before measurements were begun in order to allow it to come to equilibrium with its surroundings. The electroscop head was then mounted

The failure to do these things spells disaster in some and continuance or recurrence of the symptoms in most of these cases. The specialist frequently attempts to complete with postoperative treatments in his office that which he should have accomplished in the operating



Fig 4—Abscess. Intensive infiltration and numerous giant cells are shown.

room. He must follow some procedure which permits him to see clearly every vestige of diseased tissue and to deal with it accurately and safely. This must be accomplished without deformity and with neither functional nor cosmetic disability. Such a procedure demands a direct approach and a practically bloodless field.



Fig 5—Old chronic inflammation, cholesterol crystals resulting from degenerating epithelium.

The following is a typical example of this type of case. The patient was convalescing in my service at the time this was being written.

R. F. Y., a man, aged 51, a prominent lawyer in a Southern city, was presented for operation by his rhinologist with a statement that he had had ten intranasal operations with con-

tinued recurrence of his complaints. Four of these had been performed by the most skilled operators in the country. Within four weeks he had been returned from one of the best clinics in the country with the statement that his ethmoid labyrinth was completely everted and that he had no sinus trouble. It was the opinion of the consultant that he was suffering from a "sphenopalatine ganglion neurosis" and he advised rest and a specified diet.

The patient was suffering from pain so intense that he was getting morphine, one-half grain (0.03 Gm.), three times a day, and threatening suicide if not relieved.

He was operated on under local anesthesia by the direct method to be described. Five flat, slitlike periorbital ethmoid cells containing pus were everted, an infected, thick (one-eighth inch) sphenoid lining was removed and a frontal sinus containing thick pus and a pyogenic membrane was completely managed. The posterior wall of this sinus presented an area of bone erosion three-eighths inch in diameter.

The pain has subsided and the patient is making a rapid recovery.

All this could and should have been accomplished in the first instance. This is no criticism of the operators but rather of the method of procedure. Every surgeon



Fig 6—Chronic periostitis, osteitis of the ethmoid and turbinal, fibrosis.

recognizes the dangers of a complete operation high in the nose and would prefer to discharge patients living with an incomplete operation than risk the fatal outcome of attempted completion of the effort. More important than this is the anatomic impossibility of reaching all of the involved area by the intranasal approach.

Would it not be safer, saner and better judgment to approach such a situation directly in a practically bloodless field that is under full vision than to follow this universally common practice of attempting to work from below upward into a dangerous area in the presence of more or less free bleeding and with the certainty that the most skilled effort cannot thoroughly clear the area of disease? Is it "radical" to accomplish a completed piece of surgery which produces almost 100 per cent of favorable results in a single procedure, or would it be more accurate to call this a complete sinus operation?

The fact remains that this type of operation almost invariably produces a satisfactory result when its

various details are scrupulously observed. The patient is operated on with a minimum of risk and inconvenience, the procedure is painless and practically bloodless, the field may be rendered scrupulously clean, convalescence is comfortable and brief, and, finally,



Fig. 7—Intense chronic inflammation and periostitis of the middle turbinal

there are no permanent disabilities and rarely any recurrences of the original complaint.

The special surgeon must follow such a management if he is to regain the confidence of the laity and regain the unqualified support of the consultant who needs his services in the relief of a large group of patients.

Jansen,<sup>1</sup> as an assistant in the clinic of Lucae, in 1894, described the cardinal principles and the technic for this procedure. Ritter<sup>2</sup> described twelve years later a technic that is practically identical. Neither of these procedures apparently appealed to the specialists of this country. Arnold Knapp<sup>3</sup> described in detail the successful management of this and other cases by this method in 1899, but this made only a transitory impression.

It remained for the late Robert Lynch<sup>4</sup> of New Orleans to become discouraged with the accepted management of chronic sinus disease and to adopt the technic described by Knapp as originating with Jansen. He made some refinements in it and undertook a vigorous campaign of education among his friends and colleagues. He based his claims on a considerable series of results of his own and those of his friends. He did more than any other to arouse an interest in this method of complete management.

Sewall<sup>5</sup> published an excellent survey of this entire situation in 1926 and clearly described the existing technic with the addition of several essential refinements. He considerably shortened the skin incision of Jansen and his successors to improve the cosmetic appearance. Even more important he described a

method of ligating the ethmoidal and sphenopalatine vessels to render the intranasal field practically bloodless. He also emphasized the necessity of removing as much of the sphenoidal floor as possible to prevent scar formation with obstruction of drainage.

My associates and I have made some additions to the procedure and developed instruments to expedite its execution. We follow, however, the general management as described by Sewall and his predecessors:

1 The eyelids are closed with horsehair sutures to protect the cornea.

2 The soft tissue of the side of the nose from the eyebrow downward for an inch and from the inner canthus to the ridge of the nose is infiltrated with 0.5 per cent procaine hydrochloride containing epinephrine.

3 The nose is packed with cotton pencils wrung out of a solution of 10 per cent cocaine in 1:2,000 epinephrine hydrochloride.

4 A curved incision, in the skin, three-fourths inch long, is begun immediately below the eyebrow and carried downward around the inner canthus of the eye at a point one-fourth inch mesial to it. This exposes the apposition of the orbicularis palpebrarum and quadratus muscles. These muscles are dissected to expose the vessels of the lid connected with the angular vessels. These palpebral vessels are cut and ligated between two forceps. The internal canthal ligament is also exposed. The periosteum is incised along a similar line and elevated from the lateral border of the incision until the lacrimal sac is exposed. This is carefully separated from its ligamentous attachment and dislocated downward.

5 The separation is continued into the orbit until the posterior ethmoid vessels and nerve are exposed and is carried above and below until the entire floor of the frontal sinus and the lamina papyracea are exposed.

We disregard the anterior ethmoid vessels because we have never seen more than two or three drops of bleeding from their section in several hundred cases.

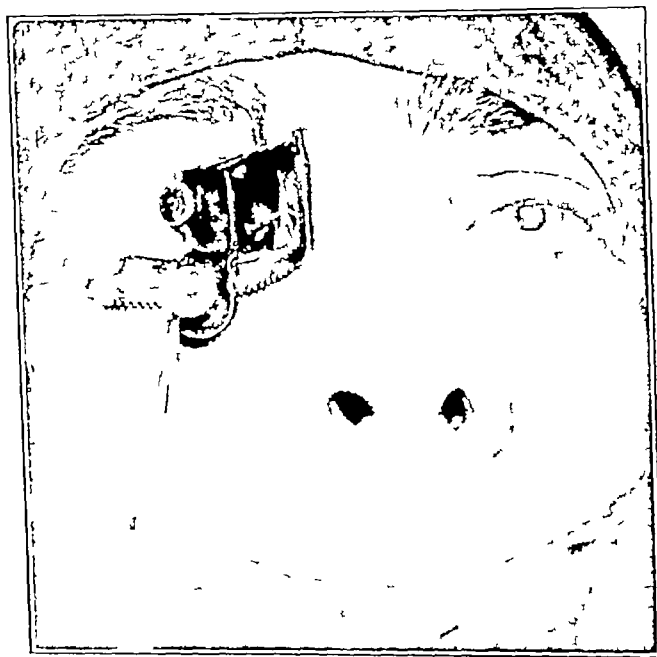


Fig. 8—A ligature passed around the posterior ethmoid vessels which are seen in the depth of the incision is held by the point of the forceps.

6 At this point a self-retaining retractor is introduced to expose clearly the field and the posterior ethmoid vessels and nerves. The nerve is anesthetized by a few moments application of 10 per cent cocaine on an applicator (fig. 8).

7 The vessels are ligated after the method described by Sewall and incised at the bony foramen. It is only rarely that the distal end bleeds more than a few drops, but the most

<sup>1</sup> Jansen, Albert. Arch. f. Laryngol. u. Rhinol. 1894, pp. 135-157.

<sup>2</sup> Ritter, Gustav. Deutsche med. Wochenschr. 32: 1294, 1906.

<sup>3</sup> Knapp, A. H. Arch. Ophth. 55: 54, 1899.

<sup>4</sup> Lynch, Robert. The Technic of a Radical Frontal Sinus Operation. St. Louis, 1917. (Quoted in Arnold Knapp's External Sinusitis, External Sinusitis, 1917.)

<sup>5</sup> Sewall, E. C. External Ocular Sinusitis. The Ethmoidal Sinus. St. Louis, 1926.

<sup>6</sup> Sewall, E. C. External Ocular Sinusitis. The Ethmoidal Sinus. St. Louis, 1926.



troublesome case may be controlled by pressure in a few moments

8 The mesial orbital wall is perforated through the lacrimal fossa or immediately behind it with a sharp perforator large enough to admit Hajek punch forceps, with which the opening is further enlarged. Specially designed heavy punch forceps

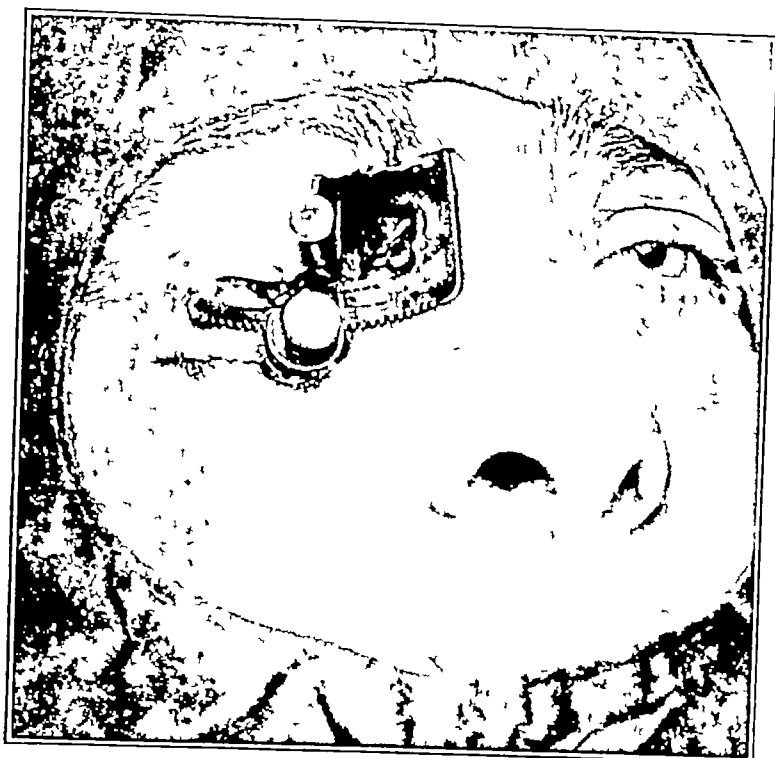


Fig 9—The posterior margin of the nasal process of the maxilla and the lateral walls of several ethmoid cells have been removed. The hyperplastic content of these cells is of especial note.

remove enough of the posterior margin of the nasal process of the maxilla to permit a complete removal of the most anterior cell and afford a clear view (fig 9)

9 The lamina papyracea is now removed with Gruenwald punch forceps, leaving a wall three-sixteenths inch high along the orbital floor when the condition of the bone permits. The same forceps introduced through the nostril remove the major portion of the ethmoid cells and leave the lateral wall of the middle turbinate clearly exposed.

10 A Sluder ethmoid knife is now inserted gently between the septum and the middle turbinal and raised to the level of the cribriform plate. It is turned laterally to fracture the turbinal slightly toward the orbital wall. The punch forceps are now introduced with the female blade along the cribriform plate, and the middle turbinal is punched away without tugging or tearing.

11 The remnants of ethmoid cells are completely removed with punch forceps and the nasal roof completely freed of covering membrane by the use of small gauze balls instead of metal curets. Every vestige of membrane must be cleared away and the bone left scrupulously clean. Any adherent shreds will be freed by a solution of 5 per cent trinitrophenol in 35 per cent acetone, which is thoroughly applied to the entire operated area.

12 One now deals with the sphenoid sinus, which is clearly exposed to view. A Sluder knife is introduced into the ostium and the opening enlarged laterally to admit punch forceps. Only once in several hundred cases have we found it necessary to use a chisel to enter this sinus.

The anterior wall is completely removed from the roof to a point about three-sixteenths inch above the floor. The mucoperiosteum containing the sphenopalatine vessels is now separated from this remnant of the wall and the floor of the sinus preparatory to the removal of as much of the floor as possible.

We are reticent about ligating the sphenopalatine artery when both sides require operation because we had a case in which there was septal necrosis, sepsis and an unfortunate outcome. We do, however, ligate and incise this membrane near the midline when its separation from the sphenoidal floor

and the posterior part of the septum does not afford access for proper bone removal or its presence threatens drainage.

The lining is now completely removed with a dull separator and small balls of gauze. If it resists this management, as is frequently the case, the cavity is packed for a few minutes with gauze soaked in the trinitrophenol solution, after which the membrane is readily separated. The only exception is the membrane in pterygoid pneumatizations, of which we have seen 16 examples in more than 500 cases.

The cavity is thoroughly swabbed with the trinitrophenol solution and the covering membrane, if it has been incised, is folded around the lateral sphenoid wall and the remaining floor to prevent granulation and to furnish its lining.

13 The frontal sinus is now entered in the region of its normal opening and the entire floor removed with punch forceps and rongeurs. The angle formed by the junction of the two tables is beveled so that no crevices remain. The lining and superior bony wall is treated in the same manner as the sphenoid.

Only rarely has it been necessary to enlarge the incision of the soft parts laterally to permit access to the most extensive sinus. We recognize the existence of frontal sinuses that extend laterally to the malar process, and the like, and would, in such instances, be forced to extend the incision to meet the requirements of a completed operation.

Two points of importance remain. The lining in moderately or abnormally high anterior portions of the sinus may be thoroughly removed without interference with the anterior wall. The cavity is packed with gauze saturated with the trinitrophenol solution for a few minutes to loosen the membrane, regardless of its thickness. Frequently, when fibrosis is marked, it may then be removed *en masse*. In any event, it may be scrubbed out with small gauze balls soaked in the solution and used as a curet. We do not believe that the sharp curet has any place in this procedure. Final inspection with a laryngeal mirror should reveal scrupulously clean bony walls.



Fig 10—The skin graft in the depth of the incision is approximated to the soft parts by a rubber tube, which runs from the frontal sinus to the nostril.

Finally, a proper drainage duct for this unobliterated portion of the sinus must be maintained. The attempt to accomplish this with obturators and long continued sounding is futile in most instances.

Barany utilized a flap taken largely from the upper portion of the septum to cover a portion of the exposed periorbital and

accomplish this purpose. The procedure is difficult, uncertain, mutilating and ordinarily inefficient.

Sewall recommends the preservation of mucosa immediately mesial to his bone opening anterior to the lacrimal fossa. This flap is frequently inadequate in size and consists of membrane that should be removed.

I prefer to introduce a five-eighths inch soft rubber tube from the sinus to a point near the floor of the nose and cover a portion of it to a point above and below the bone opening with Thiersch graft taken from the arm or thigh. The tube is smeared with petrolatum, and the skin, raw surface external, is wrapped round its lateral and anterior walls. Deep horse-hair sutures are passed through the skin and muscle to approximate the soft parts to the graft. It adheres to the underlying muscle and periorbita and prevents the adhesion of these structures to the bone margins. We have found occlusion of the duct in only three out of more than a hundred cases. This resulted, of course, from the unusual contraction of the underlying soft parts after the tube was removed on the fourth day (fig 10).

14 The antrum is managed after a modification of Denker's<sup>7</sup> technic. I described my procedure in April, 1922. I have operated on more than 1,000 patients by this method with very pleasing results to both the patient and myself.

No intranasal dressings are applied in these cases nor is the nose disturbed in any way until the fifth day. At this time secretion is removed by gentle suction which avoids the denuded bone areas. Only a few days of such care is required until the patient is discharged and permitted to complete his own management.

This type of management is not applicable to those patients who present marked involvement of the skull tables forming the frontal sinus. Such cases require the more extensive, deforming management described by Killian.<sup>8</sup>

I have performed in excess of 500 operations by this method with five deaths. Two of these fatalities were of elderly asthmatic patients who died of sudden cardiac failure, one eight hours following operation and one twenty-six hours later. One patient died of necrosis of the septum with marked sepsis. One succumbed to a necrosis of the cribriform plate with secondary meningitis about six weeks following operation. One died of streptococcic meningitis ten hours following operation. I do not feel that the deaths of the latter and the two cardiac patients can properly be charged to the surgical procedure.

I have noted dehiscences of varying size in the sphenoids of seventeen patients and congenital absence of the cribriform plate on both sides in one patient. The dura pulsated freely along the entire length of a slit representing the area of the cribriform plate. I do not regard these areas of exposed dura of as much danger as the freshly exposed dura in the presence of a suppurating mastoid. They have been in long contact with the chronically infected sinus lining and have undoubtedly been sealed to the bone margins by a chronic pachymeningitis.

The majority of these patients complain of postoperative headache, which is readily controlled, from three to thirty days following operation. The average is five days. Likewise, these patients complain of a diplopia which persists for a similar period. I have had a persistent diplopia in one case for one year but have never had a permanent example of this disability following this procedure.

I noted the recurrence of small polypi in five cases in this group. I feel that this is a reflection on the operator rather than on the operation.

In most of the cases there is freedom from moisture without any postoperative management, and a few patients resist all effort to reduce the excess of mucus.

The cosmetic disability caused by the skin incision is negligible. It is hardly visible in most cases after two months.

#### SUMMARY

1 The present, generally practiced management of chronic sinus disease is unsatisfactory to both patient and consultant.

2 It is vitally important that the rhinologist follow a management which will afford proper relief in cases presenting general symptoms of chronic sepsis, in those with local signs and symptoms, and in the cases with secondary bronchitis and asthma.

3 The management described is carried out under local anesthesia without pain and with very slight bleeding. The convalescence is short and generally uneventful.

4 The clinical results are, in general, very satisfactory.

Grand Rapids Clinic.

### Clinical Notes, Suggestions and New Instruments

BURNS FROM ANESTHESIA MASK STERILIZED IN COMPOUND SOLUTION OF CRESOL

R. P. HERWICK, PH.D., AND D. N. TREWEEK, M.D.  
MADISON, WIS.

While burns following the application of compound solution of cresol to the skin are not uncommon, the following case will be of particular interest to anesthetists.

H. S., a white girl, aged 16 years, was admitted to the orthopedic service for treatment of Pott's disease of the spine. An Albee spine graft was to be performed. The patient was anesthetized in the prone position with head resting in the face mask, thus applying a good deal of pressure against the rubber cushion. The anesthesia was of two hours' duration. When the face mask was removed it was noted that there was rather marked erythema of the face where contact had been made with the face cushion. The condition was believed to be due to the length of time during which the contact had been made. However, the condition became worse, with blistering of the skin across the bridge of the nose and on each cheek. The patient was treated by the usual means, but scarring was somewhat keloid in type, requiring roentgen therapy. The scars are distinctly disfiguring in type, one year following the accident.

Investigation of the case revealed that, a week previously, the face mask had been sterilized in about a 10 per cent solution of compound solution of cresol, remaining in the solution overnight. A more experienced nurse found the face mask in compound solution of cresol the next morning and recognized the mistake. She washed the rubber cushion in soap suds and hot water and boiled it for ten minutes, after which the face cushion and mask were again placed on the anesthetist's table.

It was doubtless used several times for short cases after exposure to compound solution of cresol and before its use in the case cited. The difference in length of time of exposure and the extra pressure exerted by the weight of the head in the prone position doubtless accounts for the absence of burns in the other cases.

Qualitative tests on portions of the rubber cushion were positive for cresols. To determine definitely that compound solution of cresol may be absorbed by rubber in sufficient quantities to produce burns the following experiments were performed.

Two previously used rubber cushions were placed in compound solution of cresol (approximately 10 per cent) and one removed after fifteen minutes, the other about twenty hours later. Both were washed in soap suds and hot water, and finally

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<sup>7</sup> See Jones, Disease and Treatment of the Maxillary Sinus, J. A. M. A., 23, 15 (April) 1922.  
<sup>8</sup> See Killian, Deafening Operation, Chesapeake and Southern Medical Journal, 13, 23, 1912.

boiled for ten minutes. With the usual method for the quantitative determination of cresols there was found present 21.1 mg in the first cushion and 64.2 mg in the other. These amounts are certainly sufficient to produce burns.

Undoubtedly the solubility of the cresols in ether, the presence of moisture on the face, and the pressure on the rubber cushion were factors in the passage of the cresols from the rubber, with consequent burning of the face.

1300 University Avenue

#### CYSTIC MYOMA OF THE ILEUM WITH INTESTINAL HEMORRHAGE

GEORGE G. FINNEY, M.D., BALTIMORE

The sources of bleeding from the bowel are many, including the relatively common hemorrhage from a bleeding gastric or duodenal ulcer, neoplasm or hemorrhoids. The case here reported illustrates one of the less common causes of intestinal hemorrhage but, in view of the course of events, seemed well worth while reporting.

##### REPORT OF CASE

M. T. C., a white man, aged 29, was admitted to the Johns Hopkins Hospital, Dec. 29, 1931, with the complaint of persistent blood in the stools. The family history was unimportant, and there was nothing in the past history that had any bearing on the present complaint. A review of the symptoms showed that the patient had never had any gastro-intestinal distress except occasional fulness after eating. There was no history of nausea, vomiting or jaundice at any time. The patient had a congenital clubfoot, and except for two plastic operations he had had no surgical treatment up until the present illness.

The present illness began, March 1, 1929, when, following lunch, the patient felt somewhat weak and a desire for defecation. At this time the patient noted that he passed what apparently were many semisolid blood clots. This was followed by several other definitely tarry stools, and after two days he became very weak and was admitted to a hospital. He was given two blood transfusions on successive days and was put on a Sippy diet. The patient remained in bed for three weeks, with considerable improvement. When he was discharged he was still weak, but apparently there was no evidence of occult blood in the stools. Eighteen months later, after a strenuous game of tennis, the patient had a hemorrhage similar to the first, but not quite as severe. He was again admitted to a hospital, and during a period of observation occult blood persisted in the stools. Nov. 1, 1930, an exploratory laparotomy was done, with gastro-enterostomy. According to the patient's statement, no ulcer was found at this time in either the stomach or the duodenum. The patient did very well following the operation, but again his stools were not entirely free from occult blood. He did very well until Jan. 25, 1931, when again he had a hemorrhage, while visiting in Ireland. He was admitted to a hospital and was put on a six weeks Sippy diet. Serum was also used to control the bleeding. The patient picked up rapidly and gained considerable weight, but when he was discharged from the hospital there was still a trace of occult blood in the stools. His last hemorrhage occurred, Dec. 1, 1931, and was similar to the others except that it was not as extensive. A feature throughout the course of the present illness has been the entire lack of abdominal pain, and only at the time of the hemorrhages has there been any nausea or vomiting, and at no time did the patient vomit blood.

A week before admission to the Johns Hopkins Hospital in December, 1931, the patient's hemoglobin was 58 per cent and he was 20 pounds (9 Kg.) underweight. His best weight was 143 pounds (65 Kg.) in March, 1931, his average weight was 135 pounds (61 Kg.) and, on admission, 115 pounds (52 Kg.).

Physical examination showed rather pale mucous membranes and evidence of moderate loss of weight. The heart and lungs were normal, the blood pressure was 98 systolic, 70 diastolic. Examination of the abdomen revealed a well healed upper right rectus scar. On palpation the abdomen was held rather tense, but no mass could be felt and there was no localized tenderness. The liver and spleen were not enlarged, and there was no evidence of ascites. The only other thing of note was some

atrophy of the muscles of the left lower extremity, which had been present since birth. Rectal examination revealed no evidence of either external or internal hemorrhoids. The sphincter tone was good, the prostate was well within normal limits, and no ulcer or mass could be felt. Stool examination, carried out each day from admission to January 11, showed no evidence of occult blood. However, beginning on the 12th of January to the date of operation, February 5, there was persistent occult blood, in spite of the fact that the patient remained on a meat-free diet. The red count remained for the most part between 4 and  $4\frac{1}{2}$  million cells, the hemoglobin, 80 per cent plus, bleeding time, three minutes, clotting time, two minutes and platelets, 306,000, with normal retraction of the clot. The two hour phenolsulphonphthalein output was 65 per cent. Non-protein nitrogen of the blood was 36 and sugar 80 mg per hundred cubic centimeters.

A fractional Ewald test revealed 25 cc of turbid, whitish fluid, no gross blood, free hydrochloric acid, 0, combined acid, 7, total acidity, 7, occult blood, negative, lactic acid, negative, microscopic examination, negative.

Fifteen minutes free hydrochloric acid, 13, combined, 23, total acidity, 36.

Thirty minutes free hydrochloric acid, 18, combined, 30, total acidity, 48.

Forty-five minutes free hydrochloric acid, 18, combined, 36, total acidity, 54.

Sixty minutes free hydrochloric acid, 13, combined, 39, total acidity, 52.

Seventy-five minutes free hydrochloric acid, 24, combined, 27, total acidity, 51.

Ninety minutes free hydrochloric acid, 28, combined, 26, total acidity, 54.

Fluoroscopic examination of the stomach showed a large prolapsed stomach, very active, contracting vigorously. The pyloric end was deformed as the result of operative intervention. No actual deformity was seen. Films showed a cow-horn type stomach, hypertonic, with good motility, and spastic. There was a defect in the duodenal cap suggesting ulcer. There was slight retention at the end of twenty-four hours.

Proctoscopic examination, February 1, did not reveal anything abnormal. The proctoscope was inserted 22 cm. The mucous membrane was normal throughout. Two small internal hemorrhoids were seen. The feces were tarry. The comment was "No adequate cause for bleeding found."

Because of the persistent bleeding, which could not be adequately explained and also had not responded to the usual measures, the patient was transferred to the surgical service, February 4, for exploratory laparotomy. The source of the bleeding could not be explained. A duodenal ulcer, which had not been located at the time the gastro-enterostomy was done, was possible. The presence of a marginal ulcer at the site of the gastro-enterostomy was also considered, but there had been an absence of discomfort throughout the course of the bleeding. The possibility of an ulcer lower down in the intestinal tract was also considered, as well as a bleeding intestinal polyp.

With the use of 4.5 cc of "avertin," supplemented by ether inhalation anesthesia, the scar of the previous operation was excised and the abdomen opened. Careful exploration of the stomach and duodenum did not reveal any evidence of active ulcer or old scar. The posterior gastro-enterostomy was apparently functioning normally, and no evidence of a marginal ulcer could be found. The appendix region was explored. There were numerous adhesions here, and the appendix was removed. On further exploration of the pelvis, a mass the size of an orange was felt in the region of the sigmoid flexure. This was quite hard and fixed and was apparently the obvious source of the bleeding. Because a new incision would have to be made, and the patient had already had considerable manipulation, it was decided to close the abdomen and at a later date explore the mass through a new incision.

The postoperative course of the patient was quite uneventful except for the fact that two hours after operation he passed a large stool, consisting mostly of blood clots. February 29, proctoscopy was done again. No ulceration was seen, but apparently there was pressure against the rectum anteriorly from without, at a level of 15 cm. The impression that was gained, therefore, was that the mass, felt at the time of operation, was outside the rectum or sigmoid.

The patient's general condition had improved to such an extent that on the 1st of March, under gas, oxygen and ether anesthesia, the lower abdomen was explored. A low left rectus incision was made, and when the abdomen was opened the tumor felt at the previous operation was located, and at this time it was found to be conical, with a nodule about 3 cm in diameter on its superior-anterior surface. It was dissected free from its attachment to the pelvic wall by blunt dissection and delivered into the wound. It could then be seen that the mass was connected with the ileum and not the large intestine, and the nodule felt was in the attachment to the antemesenteric border of the ileum. The mass was a dull purplish gray, and there was a lumen about 2 cm in diameter opening from the tumor to the normal small intestine. The mass was resected together with a portion of ileum on either side, and an end-to-end anastomosis was made. On further inspection the mass was found to be between 3 and 4 feet above the ileocecal valve. Following operation, the patient's convalescence was uneventful. It is interesting to note that the stools contained some occult blood through the 5th of March, five days after the operation, after which there was no further blood present. The patient gained back considerable weight, and he was discharged in good condition, March 22, 1932.

## SUMMARY

A white man, aged 29, was admitted to the hospital, with the complaint of recurring tarry stools. The family and past histories had no bearing on the present illness. Approximately three years before admission the patient felt faint, soon after which he passed a large stool consisting mostly of blood clots. He was treated medically but, after a period of months, had a second hemorrhage. Soon after the second hemorrhage the patient was operated on, at which time a posterior gastro-enterostomy was done, presumably for a bleeding gastric or duodenal ulcer. The recovery from the operation was satisfactory, but on discharge from the hospital there was still some occult blood in the stools. Following another hemorrhage the patient was admitted to the hospital, Dec 29, 1931. Examination revealed nothing on which a definite diagnosis could be based. Because of the persistence of blood in the stools, a laparotomy was done, Feb 5, 1932, at which time a normal stomach and duodenum were found, and a posterior gastro-enterostomy without evidence of marginal ulcer. Also at this time a mass was found in the pelvis, presumably in the sigmoid flexure. After the patient had recuperated from this operation, March 1, the abdomen was explored through a low left rectus incision, and the tumor, which was found to be in the ileum about 3 feet above the ileocecal valve, was removed. Convalescence was uneventful, and the patient was discharged in good condition, with stools free from occult blood.

## PATHOLOGIC REPORT

**Gross Examination**—A piece of small intestine about 14 cm in length, with a small piece of the mesentery attached, was examined. On the surface of the intestine opposite the mesentery there was a large polypoid tumor mass, which measured 7 by 6 by 5.5 cm. This mass was roughly pyramidal and was attached to the intestine by a rather thick stalk measuring 4.5 by 2.5 cm. When the small intestine was injected, no fluid was found to pass into the large tumor, which was for the most part cystic in nature and no fluid could be squeezed out of the tumor into the lumen of the intestine. The tumor superficially resembled a large Meckel's diverticulum.

When the small intestine was opened it was found to be normal up to the point at which the neck of the tumor was encountered. Here there was a projection into the lumen of the intestine of a very firm yellowish-white tumor measuring 4.5 by 2.5 cm. The mucosa of the intestine over this projection was thickened and there was evidently a chronic ulceration in this projecting mass. No connection from the intestine to the cyst which was filled with a dark reddish fluid, was found. Block 1 was taken through the thick apex. Block 2 was taken through the hard tumor mass and showed normal intestinal mucosa running on to the tumor. Block 3 showed tumor attached to the wall of the cyst. Block 4 was a piece of the cyst wall and contained a white nodule.

**Microscopic Examination**—Section 1 showed a cyst wall made up of flattened rather broad strands of a dense connective tissue. In this cyst wall there was no evidence of misplaced

gastric mucous membrane or aberrant pancreatic tissue. There were a few round cells near the inner edge of the cyst wall. The lumen of the cyst was filled up with red blood cells and fibrin which suggested blood clot. Nothing else was seen except a few large cells.

Section 2 showed fairly normal mucosa of the ileum running out to the tumor. As the muscular coat of the intestine neared the tumor, it broadened out and extended into the tumor mass. The mucosa of the bowel, as it ran on to the tumor, was apparently somewhat thickened and showed evidence of necrosis. Many of the cells were vacuolated and resembled goblet cells. There was a definite cellular infiltration into the lower layers of this thickened mucosa. This mucosa seemed rather peculiar and out of place in this situation. It showed some resemblance to colon mucous membrane, and suddenly the mucosa came into a rather deep ulcer, the base of which was infected. Beneath this infected layer the tumor proper was seen, which consisted of strands and whorls of smooth muscle tissue. The nuclei stained rather deeply. The cells were long and spindle shaped. Mitotic figures were not very prominent. It had all the appearances of a myoma.

Section 3 showed the tumor running on to the wall, and showed nothing very different. One could see the main body of



Cystic myoma of ileum strongly suggesting Meckel's diverticulum

the tumor made up of smooth muscle, and overlying this tumor was a dense band of connective tissue, which came up to form the wall of a cyst. There were areas of degeneration in the myoma. No misplaced pancreatic tissue or gastric mucosa were seen in this section. The tumor did not impress one as being of malignant nature. It apparently was not invasive and showed very few mitotic figures.

Section 4, which was more of the cyst wall, showed a thick band of connective tissue overlying a necrotic area in which nothing remained but strands of hyalinized connective tissue and the wall of the vessels.

The final diagnosis was myoma of the ileum, with cystic degeneration and hemorrhage.

## COMMENT

The two points of particular interest in this case are, first, the difficulty of making a correct clinical diagnosis and, second, the speculation as to the correct pathologic diagnosis. In reviewing the clinical history, the significance of the absence of abdominal distress, which is so common at some time or other in the history of gastric or duodenal ulcers, was apparently not appreciated. This was true to the extent that an exploratory laparotomy was done with a needless gastro-enterostomy, and the true source of the hemorrhage was not

located at this time. The pathologic diagnosis, as given, is myoma of the ileum. There are a number of points, however, that suggest that the main tumor mass consisted of a Meckel's diverticulum, with the secondary formation of myomas in the wall. This contention is borne out by the location of the tumor mass about three feet above the ileocecal valve, and its position on the free border of the intestine. It is true that no mucosa could be found lining the cyst, even after careful microscopic search, but the wall had been so thinned out by pressure from within that it would be impossible to determine whether or not there had been present the normal intestinal mucosa, or possibly some aberrant gastric mucosa. The appearance of the tumor at operation suggested a Meckel's diverticulum.

#### CONCLUSION

To the commoner causes of intestinal bleeding should be added the possibility of hemorrhage from a benign tumor of the intestine, or a Meckel's diverticulum. This possibility should be seriously considered, particularly in the absence of abdominal distress, when other obvious sources of bleeding can be ruled out.

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT  
H. A. CARTER, Secretary

### REPORT TO THE COUNCIL ON PHYSICAL THERAPY ON HELIOTHERAPY METHODS IN SOME EUROPEAN SANATORIUMS

W. W. COBLENTZ, PH.D.  
WASHINGTON, D. C.

While en route to the second International Congress on Light,<sup>1</sup> which met in Copenhagen in August, 1932, I took the opportunity to visit various heliotherapy stations in Europe in order to learn what is being done regarding the estimation and standardization of the dosage intensity of ultraviolet radiation used in the treatment of disease.

The institutions visited were as follows: in France, Dr. J. Saidman's Institute of Actinology in Paris and his Rotating Solarium in Aix les Bains; in Switzerland, the cantonal hospital (Dr. A. Rosselet) in Lausanne, several of Dr. Auguste Rollier's sanatoriums in Leysin, the cantonal hospital (Dr. W. Stöcklin) in Davos, and the Light-Climate Observatory (Dr. P. Gotz) in Arosa; in Germany, the Institut für Strahlenforschung (Dr. W. Friedrich) in Berlin, the Meteorological Observatory (Dr. Süring) at Potsdam, and the Lichtforschungsinstitut (Dr. F. Dannmeyer) at Hamburg; in Denmark, the Finsen Institute (Dr. A. Reyn) at Copenhagen, the Minkrup Coast Sanatorium, the hospital at Odense, the Julemaerke Sanatorium, on Kolding Fjord and the Vejleford Sanatorium (Dr. J. Gravesen); and in London the National Institute for Medical Research.

As was anticipated before going, excepting in minor details, European methods of light therapy are not essentially different from those practiced in this country. In general, patients suffering from pulmonary tuberculosis are not given treatments with ultraviolet rays. But the ultraviolet sunlight treatment of surgical cases of tuberculosis is successful, especially at the high altitude stations in Switzerland.

For treatment with artificial sources of radiation, some of the smaller hospitals use portable carbon arc and mercury arc lamps. In one hospital there was an installation of four or five horizontal mercury arc lamps in long rectangular reflectors placed round a circle. At a distance of about a meter in front of the lamp a white line was painted on the floor, and the patients follow along this line to the tune of phonograph music.

In general, the mercury arc lamp is considered "too cold" and in at least one German hospital there is an installation consisting of quartz mercury arc lamps and high-powered, gas filled, tungsten filament lamps, which combination simulates more nearly natural sunlight in total radiation.

The high altitude solariums in Switzerland depend principally on natural sunlight for the treatment of surgical cases of tuberculosis with light rays. In one institution, when there is no sunlight, the affected part (e.g., the knee) is exposed to infrared radiation. Instead of the fancy, expensive lamps sold to the medical profession, numerous ordinary 500-watt electric lamps (in common use for heating rooms, and costing only the equivalent of a few dollars) are used by individuals. For this purpose the lamps are provided with clamps for attachment to the beds.

In the sanatoriums in Denmark, where there is less sunlight than in the countries mentioned, considerable dependence is placed on artificial ultraviolet radiation. The equipment appears to be standardized, consisting of 30-ampere vertical, bare, carbon arc lamps, hung in groups of three, longitudinally, between two couches. This permits the simultaneous treatment of two persons by each two-couch, three-lamp, installation. In one sanatorium, two long rooms are set aside for light treatments. For this purpose there are several dozen carbon arc lamps, each one of which is adjusted for voltage by an electrician, at a central switchboard, provided with voltmeters and rheostats. The sunporches of the sanatoriums usually face south or southeast, and, at least in some of the mountain sanatoriums, the exposure of the patient is begun soon after sunrise, which is thought to be especially beneficial after the period of darkness and rest. But no exposures are made during the heat of the noon and afternoon hours. In this respect, as already stated, the procedure is much the same in all countries.

Some of the foregoing summary is, of course, common knowledge to many of the practicing heliotherapists, and the main purpose in giving it is to form a background for a consideration of the relative importance or unimportance of attempting to standardize the dosage intensity of the source of radiation used in phototherapy.

Excepting one small solarium, which is provided with pyrheliometers for measuring the total incident solar radiation intensity, I saw no systematic equipment for measuring the dosage intensity, though one institution had a dosage meter on hand, but it was not used.

The general dosage procedure is empirical, based on the attending physician's general experience and on the reaction of the particular patient undergoing treatment.

This personal observation of the reaction of each patient is, after all, an important procedure that cannot be delegated to an inanimate dosage meter. If the patient loses appetite, shows fatigue, or gives other indications of overexposure, however slight, the attendant notes the condition and varies the light treatments accordingly.

While an inanimate measuring instrument (especially if it is an integrating device that gives the total amount of ultraviolet radiation received during periods of sunshine and clouds) would be a useful adjunct in giving such treatments, it cannot displace the personal interest of the attendant. Furthermore, I have seen patients who would inform the attendant when the exposure was becoming fatiguing.

From the point of view of the biophysicist seeking information and data to form a basis for a specification of a unit of dosage of ultraviolet radiation, it is evident, from the foregoing exposition of the case, that, while an inanimate dosage meter will be desirable as an adjunct in phototherapy, it cannot entirely displace the personal attention that is given by an experienced attendant.

However, the inanimate meter would be helpful in case the attendant should happen to be inexperienced or negligent, especially when using artificial sources of radiation, differing widely from the sun in total output and in spectral range of ultraviolet emitted. In this connection the specification of the dosage intensity of ultraviolet radiation should receive early attention, and in arriving at such a specification the personal experience and empirical rules of the attendants will be of great value.

I would add that my ultraviolet measurements (published in the Bureau of Standards Journal of Research, January, 1933) and my conferences with heliotherapists in Europe, during the past summer, indicate that the specification of minimum intensity of ultraviolet radiation necessary to insure effective therapeutic action, adopted by the Council on Physical Therapy, appears to be a fair appraisal of the data relating to this question as it is understood today.

2737 Macomb Street N.W.

<sup>1</sup> Report in Science 76:412 (Nov. 4) 1932



## Council on Pharmacy and Chemistry

### NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION

P. N. LEECH, Secretary

#### DIPHTHERIA TOXOID (See New and Nonofficial Remedies, 1932, p. 382)

United States Standard Products Company, Woodworth, Wis.

*Diphtheria Toxoid U. S. S. P.*—Prepared from diphtheria toxin whose L<sub>+</sub> dose is 0.2 cc or less by treatment with 0.3 to 0.4 per cent formaldehyde at a temperature of from 37 to 40 C until its toxicity is so reduced that injection of five human doses into guinea pigs causes no local or general symptoms of diphtheria poisoning. The product is tested for antigenic potency by injection into at least ten guinea pigs of one human dose each if at the end of six weeks at least 80 per cent of the animals survive for ten days the injection of five minimum lethal doses of diphtheria toxin, the toxoid is considered satisfactory. The product is standard to contain in 2 cc enough of the toxoid for one immunization treatment. Marketed in packages of two 1 cc vials in packages of twenty 1 cc vials in packages of one 6 cc vial in packages of one 20 cc vial and in packages of one 30 cc vial.

#### LIQUID PETROLATUM (See New and Nonofficial Remedies, 1932, p. 245)

The following dosage form has been accepted

*Maltine with Mineral Oil and Cascara Sagrada*. A mixture of liquid petrolatum 40 cc and maltine 60 cc containing a nonbitter extract of cascara sagrada representing 2.2 Gm of cascara sagrada per 100 cc. Maltine meets the requirements given for this product under Maltine with Cod Liver Oil (New and Nonofficial Remedies 1932 p. 273).

Prepared by The Maltine Co. Brooklyn. No U. S. patent. U. S. trademark 44 566.

## Committee on Foods

### GENERAL COMMITTEE DECISIONS

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISIONS ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD COMPOSITION AND FOOD ADVERTISING

RAYMOND HERTWIG, Secretary

#### SO-CALLED SPECIAL "DIABETIC FOODS" OR SPECIAL FOODS FOR SUGAR AND CARBOHYDRATE RESTRICTED DIETS

There is authoritative evidence that commercially prepared special 'diabetic foods' are of limited usefulness to the diabetic patient and that the availability of insulin makes them no longer necessary. Artificial substitutes for ordinary foods are not to be favored, it is much better for the diabetic patient to learn how to plan his diet with foods in common use and readily available. The diet should be exactly prescribed in carbohydrate, protein and fat and total calories.

The designation of a food as a "diabetic food" merely because it is low in carbohydrates is now unwarranted and misleading and gives the erroneous impression either that the food taken in unrestricted quantities in diabetes is harmless or that it has remedial action. Except for the necessity of restricting foods to avoid overstepping the food tolerance there are no special diabetic nutritional requirements. The exploitation of starch-free or low carbohydrate foods containing an excess of protein for use by diabetic patients is unwarranted. Protein may be tolerated almost as poorly as starch in diabetes.

Law advertising for these special foods shall not include disease names such as diabetes nor directly or indirectly indicate that the foods are curative or increase the ability of the body to utilize sugar or give the impression of harmlessness when eaten in unrestricted amounts by diabetic patients. Foods marketed for the sick with diabetes shall not be advertised to the public except under the restriction just stated. Advertising of a medicinal or therapeutic character shall be limited to medical periodicals or material for physicians exclusively. The

package label shall conform to the preceding requirements but may bear statements that the food is suitable for incorporation in diets indicated for moderate restriction of carbohydrates. Recipes on the label or in the advertising shall prescribe the quantities of each ingredient by weight and state the approximate protein, fat and carbohydrate content of the finished product.

### WHOLE WHEAT AND GRAHAM FOODS

The terms whole wheat, entire wheat and graham as applied to flour and to bread are synonymous. In harmony with this understanding, these terms shall be used as food names or as parts of food names only when the sole cereal and farinaceous ingredient is whole wheat. Their use as names for foods with other composition is misinformative and misleading. Descriptive food names shall correctly and properly identify the nature of the foods.

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED-FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary

#### PRUNE KRUSH BRAND CALIFORNIA PURE PRUNE PULP

*Manufacturer*—California Fruit Krush Co., San Francisco

*Description*—Cooked pureed prune pulp, in tins

*Manufacture*—Small size prunes are washed with water sprays, soaked in water over night, and boiled in a steam jacketed kettle until the skin disintegrates, the stones are separated out and the pulp is forced through a screen (0.07 inch perforations) in a special machine. The pulp is cooked in a preserving kettle to a definite consistency and is automatically canned and processed.

*Analysis* (submitted by manufacturer)—

	per cent
Moisture	74.0
Total solids	26.0
Ash	0.8
Fat (ether extract)	0.5
Protein (N × 6.25)	1.8
Reducing sugars before and after inversion as dextrose	17.0
Sucrose	0.0
Crude fiber	1.4
Pectin	1.9
Titrateable acidity as citric acid	0.6
Carbohydrates other than crude fiber (by difference)	20.9

*Calories*—1.0 per gram, 28 per ounce.

*Claims of Manufacturer*—"Prune Krush" is for all table uses of prunes, is laxative and may be used in soft diets.

#### THAT GOOD FLOUR—HELIOTROPE PATENT (BLEACHED)

*Manufacturer*—Oklahoma City Mill & Elevator Company, Associate of General Mills, Minneapolis

*Description*—A patent flour milled from hard winter and soft red winter wheat, bleached.

*Manufacture*—Selected wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL June 18, 1932, page 2210. Chosen flour streams are blended, bleached with a mixture of benzoyl peroxide and calcium phosphate (1/10 ounce per barrel) and with chlorine (3/4 ounce per barrel) and automatically packed in cotton sacks.

*Analysis* (submitted by manufacturer)—

	per cent
Moisture	13.1
Ash	0.39
Fat (ether extraction method)	0.8
Protein (N × 5.7)	10.0
Crude fiber (maximum)	0.5
Carbohydrates other than crude fiber (by difference)	75.2

*Calories*—3.5 per gram, 99 per ounce.

*Claims of Manufacturer*—A patent flour for general home baking.

**PFIZER CITRIC ACID, ANHYDROUS***Manufacturer*—Charles Pfizer & Co, Inc, Brooklyn*Description*—Coarse granular, fine granular or powdered anhydrous citric acid meeting all U S P tests for hydrated citric acid for purity, assaying not less than 108.8 per cent as U S P citric acid*Manufacture*—An aqueous solution of sucrose and necessary nutrient salts is subjected to an oxidizing mold fermentation. Care is exercised to avoid contamination of the medium with any miscellaneous micro-organisms. The fermentation is carried out under aerobic conditions. When substantial conversion of the sucrose is obtained, the crude citric acid is precipitated with lime and filtered from the mother liquor. The calcium citrate is suspended in clean water and treated with sulphuric acid, the resulting solution of citric acid is filtered and concentrated, the crystallized citric acid is separated from the mother liquid and recrystallized to desired purity. The crystals are air dried at elevated temperature and packed in suitable containers.*Analysis* (submitted by manufacturer) —

	per cent
Citric acid, anhydrous	99.5–99.8
Moisture	0.1–0.4
Ash	0.02–0.05
	Maximum
	limits of impurities
Oxalate (C <sub>2</sub> O <sub>4</sub> )	0.02
Phosphate (PO <sub>4</sub> )	0.000
Sulphate (SO <sub>4</sub> )	0.024
Tartrate (C <sub>4</sub> H <sub>4</sub> O <sub>6</sub> )	0.02
Heavy metals as lead (Pb)	0.0005
Iron (Fe)	0.0005
Calcium (Ca)	0.012

*Calories*—2.5 per gram (International Critical Tables 5 165), 71 per ounce*Claims of Manufacturer*—This citric acid is for use in foods when an organic acidulant is desired**PRUDENCE BOSTON BROWN BREAD**

(Colored with Molasses and Burnt Sugar Only)

*Manufacturer*—Boston Food Products Company, Boston*Description*—Canned "Boston Brown Bread" containing wheat and rye flours, corn meal, New Orleans molasses, salt, baking soda and caramel (burnt sugar)*Manufacture*—Weighed quantities of wheat and rye flours, corn meal and baking soda are mixed and added to New Orleans molasses, salt, water and a small quantity of caramel for coloring. The mixture is thoroughly agitated in a mixing machine, transferred to a filling machine and automatically packed in cans coated on the inside with vegetable shortening. The partially sealed cans are air exhausted, processed for four hours and sealed.*Analysis* (submitted by manufacturer) —

	per cent
Moisture	45.7
Total solids	54.3
Ash	3.2
Fat (ether extract)	1.2
Protein (N × 6.25)	4.3
Reducing sugars before inversion as dextrose	5.4
Reducing sugars after inversion as invert sugar	15.5
Sucrose	9.6
Crude fiber	1.2
Starch (acid hydrolysis method)	26.3
Carbohydrates other than crude fiber (by difference)	44.4

*Calories*—2.1 per gram, 60 per ounce*Claims of Manufacturer*—A Boston brown bread fulfilling the United States Department of Agriculture definition and standard**MALTEX CEREAL**

Prepared Wheat, Malted Flour, and Salt

*Manufacturer*—Malted Cereals Company, Burlington, Vt*Description*—A mixture of lightly toasted coarsely ground wheat with the coarse bran removed, granular baked malted wheat flour and a small amount of salt, packed in cartons*Manufacture*—The main ingredient is coarsely ground cleaned lightly roasted durum wheat with the coarse bran and fine flour removed. The "malt" ingredient is prepared by malting white flour with diastatically active barley malt, the mixture is maintained at a definite temperature for several hours, baked in sheets, cooled and ground

The roasted wheat and baked "malted mix" are mixed in definite proportions with a small amount of salt and automatically packed in cartons

*Analysis* (submitted by manufacturer) —

	per cent
Moisture	5.6
Ash	2.1
Sodium chloride (NaCl)	0.2
Fat (ether extraction method)	1.5
Protein (N × 6.25)	15.2
Reducing sugars as dextrose before inversion	6.7
Reducing sugars as dextrose after inversion	7.0
Sucrose (polarization method)	0.5
Crude fiber	0.9
Carbohydrates other than crude fiber (by difference)	74.9

*Calories*—3.7 per gram, 105 per ounce*Claims of Manufacturer*—A malt flavored cereal for table use**JEWEL EXTRA FANCY HEAD  
BLUE ROSE RICE***Distributor*—Jewel Tea Co, Inc., Barrington, Ill*Description*—Whole, hard-brushed rice kernels in cartons*Manufacture*—The rough rice is screened and fanned to remove foreign matter, and is passed between milling stones to break the hulls without crushing the grain. The chaff is removed by fanning. The germ and bran are separated from the kernels by friction by passing the rice between concentric cylinders, the inner being covered with sheepskin and the outer lined with wire gauze. The hard-brushed rice is graded by being passed over separating screens. The "head rice," unbroken kernels, with less than 0.5 per cent broken kernels, is used for this brand.*Analysis* (submitted by manufacturer) —

	per cent
Moisture	10.7
Ash	0.4
Fat (ether extraction method)	0.5
Protein (N × 6.25)	7.1
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	80.7

*Calories*—3.6 per gram, 102 per ounce*Claims of Manufacturer*—An unbroken hard-brushed rice for table use**LUCKY BREAD GRAHAM FLOUR***Manufacturer*—Federal Mill, Inc, Lockport, N Y*Description*—Whole wheat flour, the bran is moderately fine.*Manufacture*—Selected spring wheat is cleaned, scoured as in the preparation of wheat for the making of regular flour, and milled as in the making of flour. At the end of the process, the flour and "feed" fractions are blended in the same proportions as they occur in the original wheat.*Analysis* (submitted by manufacturer) —

	per cent
Moisture	14.5
Ash	1.6
Fat (ether extraction method)	2.3
Protein (N × 5.7)	12.8
Crude fiber	2.5
Carbohydrates other than crude fiber (by difference)	66.3

*Calories*—3.4 per gram, 97 per ounce.*Claims of Manufacturer*—Conforms to the United States Department of Agriculture definition and standard for graham flour**LUCKY WHOLE OF THE WHEAT FLOUR***Manufacturer*—Federal Mill, Inc, Lockport, N Y*Description*—Whole wheat flour, the bran is moderately fine*Manufacture*—Selected spring wheat is cleaned and scoured, as in the preparation of wheat for making regular flour, and ground through steel rolls. The product contains all portions of whole wheat in their natural proportions*Analysis* (submitted by manufacturer) —

	per cent
Moisture	14.0
Ash	1.8
Fat (ether extraction method)	2.8
Protein (N × 5.7)	14.4
Crude fiber	2.9
Carbohydrates other than crude fiber (by difference)	64.1

*Calories*—3.4 per gram, 97 per ounce*Claims of Manufacturer*—Conforms to the United States Department of Agriculture definition and standard for whole wheat flour

# RADIOLOGIC SERVICE IN THE UNITED STATES

REPORT BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Since general practitioners as well as many specialists depend on the radiologist for invaluable aid in diagnosis and treatment, the accurate certification of specialists in this field is of the utmost importance to the patient as well as to the profession. From the beginning of this work the Council has always stressed the conception that the practice of radiology is the practice of medicine.

The field of radiology is attractive to the recent graduate. It is especially attractive to ambitious persons of a mechanical turn of mind for the reason that the work employs mechanical devices and it appears to the uninformed public that little training or special knowledge is necessary. A large number of lay persons trained as technicians have established radiologic laboratories and attempted to give the impression that they are medically competent in this field. This group attempts to convert this special branch of medicine into a trade and to carry an impression to the public that medical training is not essential. In many instances, physicians themselves patronize these laboratories and thus foster them. Often lay controlled and operated laboratories hire physicians to sign their reports and otherwise "use" their names. The designation by the Council of those qualified not only discourages the unreliable commercial laboratory operated by technicians or lay specialists but also tends to dissuade improperly qualified physicians from holding themselves out as specialists in this field. By the regular publication of lists of accredited radiologists, physicians generally are encouraged to refer their work to qualified medical graduates whether they are in hospital or private laboratories.

In analyzing the qualifications of candidates for recognition as specialists in radiology, it is noted that a number of physicians are applying who give only a small portion of their time to the work, the remaining portion being devoted to another specialty or to general practice. According to their training and experience they may be qualified as radiologists, but since they are located in sparsely populated sections there is not sufficient work in radiology to occupy their entire time. Naturally, in order to supplement their income they engage in other work. This situation constitutes somewhat a problem in the certification of radiologists.

When it is a physician's desire to be recognized as a specialist in radiology and he fulfils the essentials, the question arises as to how much time should be required in the specialty in order that he may be eligible. Briefly, the question is: Is the eligibility of a physician for recognition to be judged by what he can perform or what he actually does perform with regard to the volume of work? It would seem only fair to credit a physician with his ability whether he actually carries out a large volume of work or not. It is felt by some that the part time man is not a specialist and should

not be accredited as such, the contention being that, unless a physician's main interest and the majority of his time and activity are devoted to the specialty in which he seeks endorsement, he should not be certified by the Council. Others feel that it is desirable to designate certain radiologists in more or less isolated sections who may devote only a small portion of their time to the specialty and thus serve the best interest of the patient.

The third publication of the list of specialists in radiology contains the names of some 1,200 physicians. The work of preparing a list of acceptable radiologic laboratories and departments of radiology was assigned the Council on Medical Education and Hospitals by the House of Delegates at the Minneapolis session in 1928. The essentials for physicians conducting approved radiologic laboratories were set up by the Council in collaboration with a large number of prominent radiologists. With the shift of the emphasis from the radiologic laboratory to the qualifications of the physician in direction as a radiologist, a revision of the essentials was made to correspond with this change in point of view. The revised essentials, which are published in connection with this article, were adopted by the Council in February, 1932, and ratified by the House of Delegates at the New Orleans session. Previous to that time the list consisted mainly of physicians conducting private and hospital radiologic laboratories. The list is now meant to include all physicians properly qualified as radiologists whether in private or hospital laboratories, governmental departments, educational work or research.

The membership in special radiologic societies has been of incalculable value in extending recognition to those qualified. Since these special societies do not certify specialists, naturally their membership lists contain the names of many physicians whose major interest and time are given over to other specialties. Special societies may also at times accept members whose training and experience are not acceptable for certification of specialists. Since the Council as an impartial, fact finding body with complete biographic information on all physicians has taken up this work, it has become apparent that it offers a most practical means for the identification of specialists.

Without doubt the Council's work has helped to place the specialty of radiology on a high plane. The work of preparing reliable lists of radiologists will be maintained as a permanent part of the Council's work. The consideration of new applications will go on continuously and revised lists will be published from time to time. The cooperation of the physicians in the specialty has been excellent and must continue in order that the lists may be of maximum value.

A description of how the list is compiled may be referred to in *THE JOURNAL*, March 19, 1932, page 984.

NAME	ADDRESS	TYPE OF SERVICE
Suare, Henry	1414 S Hope St.	Radiology
Solland, Albert	1107 S Hope St	Röntgen therapy
Stafford, Owen R	520 W 7th St	Radium therapy
Taylor, Raymond G	1212 Shatto St	Röntgenology
Witter Calvin B	511 S Bonnie Brae St	Radiology
		Röntgenology *
<b>Mare Island</b>		
Perry, Wendell Holmes	U S Naval Hospital	Röntgenology
Planner, Wm Ellis	U S Naval Hospital	Röntgenology
<b>Oakland</b>		
Bowen Carl B	1624 Franklin St	Röntgenology
Jelte S A	230 Grand Ave	Radiology
Mandeville, Frederick B	434 30th St	Röntgenology *
Petch Phillip H	428, 17th St	Röntgenology
Peters Chas E	400 29th St.	Röntgenology *
Sargent, Wm H	1624 Franklin St	Röntgenology *
Siefert, Alfred C	Hawthorne Ave & Webster St	Radiology
<b>Palo Alto</b>		
Powers Robert A	261 Hamilton St	Röntgenology
<b>Pasadena</b>		
Chapman John Frye	65 N Madison Ave	Röntgenology *
Parker Carl H	65 N Madison Ave	Röntgenology *
<b>Pomona</b>		
Swearingen, F C	586 N Main St.	Radiology
<b>Redlands</b>		
Folkins, F H	47 E Vine St.	Röntgenology
<b>Riverside</b>		
Thuresson Paul F	3770 12th St	Diagnostic roent
<b>Sacramento</b>		
Briggs, Rowland S	1014 8th St	Radiology
Cook, Orrin S	1127, 11th St	Röntgenology
Graham Ralph S	2830 L St	Röntgenology *
Lawson, John D	928 Jay St.	Radiology
Woolford Joseph S	926 Jay St	Röntgenology
Zimmerman, Harold	1027, 10th St.	Radiology
<b>San Bernardino</b>		
Owen C C	308, 6th St	Röntgenology *
<b>San Diego</b>		
Elliott A E	1831, 4th St	Radiology
Kinney, L C	1831, 4th St	Radiology
Spalding Otis B	U S Naval Hospital	Röntgenology *
Welskotten, W O	233 A St	Diagnostic roent
Whitehead Ely L	U S Naval Hospital	Röntgenology *
<b>San Francisco</b>		
Bryan Lloyd	450 Sutter St	Röntgenology *
Crow, Lloyd B	1400 Fell St	Röntgenology *
Donovan, Monica	450 Sutter St	Röntgenology
Fulmer Chas C	27th and Valencia Sts	Radium therapy
Garland L Henry	450 Sutter St	Röntgenology *
Hunsberger H S	450 Sutter St	Röntgenology *
Ingber I S	490 Post St	Diagnostic roent
Leef Edward	2361 Clay St	Radiology
Levitin Joseph	450 Sutter St	Radiology
Nevell Robert R	2361 Clay St	Radiology
O'Neill John R	2200 Hayes St	Röntgenology
Rehfsch John M	450 Sutter St	Röntgenology *
Rice Frank M	2000 Van Ness Ave	Röntgenology *
Rodenbaugh F H	490 Post St	Radiology
Ruggles Howard E	384 Post St	Röntgenology
Starks, Dorothy J	2361 Clay St	Radiology
Stone Robert S	Parnassus and 3d Ave	Röntgenology
Williams Francis	870 Market St	Radiology
<b>San Jose</b>		
Broemser, Milton A	311 S 1st St	Radiology
Bullitt James B	241 E Santa Clara St	Röntgenology
Richards, Charles M	241 E Santa Clara St	Röntgenology *
<b>San Pedro</b>		
Allen, Albert	410 W 6th St	Diagnostic roent
Keener, Harry Allison	U S S Relief	Diagnostic roent.
<b>Santa Barbara</b>		
Clark Daniel M	1520 Chapala St	Diagnostic roent
Geyman M J	1520 Chapala St.	Radiology
Ullmann H J	1520 Chapala St.	Radiology
Ware, James G	1513 State St	Röntgenology *
<b>Santa Monica</b>		
Hopkirk C C	710 Wilshire Blvd	Diagnostic roent.
<b>Stockton</b>		
McGurk Raymond T	242 N Sutter St	Röntgenology *
Sheldon F B	242 N Sutter St	Radiology

## COLORADO

<b>Colorado Springs</b>		
Brown L Gordon	707 N Cascade Ave	Radiology
<b>Denver</b>		
Allen K D A	227, 16th St	Röntgenology *
Bouslog, John S	227, 16th St	Radiology
Brandenburg H P	227, 16th St	Radiology
Childs, S B	227, 16th St	Radiology
Conyers Chester A	209 16th St	Radiology
Crosby L G	227 16th St	Radiology
Diemer Frederick E	19th and Pearl Sts	Diagnostic roent
McCaw William W	Fitzsimons General Hosp	Röntgenology *
Newcomer Elizabeth	209 16th St	Röntgenology *
Newcomer N B	1616 Tremont St	Radiology
Schmidt, Ernst A	4200 E 9th Ave	Röntgenology
Stephenson F B	227 16th St	Radiology
Vasson W W	227 16th St	Röntgenology
Withers, Sanford	1612 Tremont St	Radium therapy
<b>Longmont</b>		
Matlack, J A		Diagnostic roent.
<b>Sterling</b>		
Daniel, J H		Röntgenology
<b>Woodmen</b>		
Forney, F A		Diagnostic roent.

NAME	ADDRESS	TYPE OF SERVICE
<b>Bridgeport</b>		
Groark Owen J	881 Lafayette St.	Diagnostic roent
Lockhart R Harold	144 Golden Hill St	Radiology
Parmelee B M	144 Golden Hill St	Radiology
<b>Hartford</b>		
Butler Nicholas G	50 Farmington Ave	Röntgenology
Cilman Max	242 Trumbull St	Diagnostic roent
Hoffman Charles C	700 Main St	Diagnostic roent
Ogden Ralph T	179 Allyn St	Radiology
Roberts Douglas J	179 Allyn St	Radiology
Van Strander W H	179 Church St	Radiology
<b>Meriden</b>		
Otis Fessenden N	165 W Main St	Röntgenology
<b>Middletown</b>		
Murphy, James	101 Broad St.	Radiology
<b>New Britain</b>		
Grant Arthur S	55 W Main St	Röntgenology
<b>New Haven</b>		
Bergman A P	27 Elm St	Diagnostic roent
Goldman George	201 Park St	Diagnostic roent
Scott, Clifton R	215 Whitney Ave	Röntgenology
Wheatley Louis F	420 Temple St	Radiology
<b>Norwalk</b>		
Perkins, Charles W	520 West Ave	Röntgenology *
<b>Waterbury</b>		
Atkins Samuel M	111 W Main St.	Röntgenology *
<b>Willimantic</b>		
Kinney Kenneth K	29 North St	Röntgenology

## DELAWARE

<b>Wilmington</b>		
Allen B M	909 Washington St	Diagnostic roent
Burns Ira	601 Delaware Ave	Diagnostic roent
McClintock, G C	1024 W 8th St.	Diagnostic roent

## DISTRICT OF COLUMBIA

<b>Washington</b>		
Bierman, M I	1801 Eye St NW	Diagnostic roent.
Carroll, William J	% The Surgeon General	
	U S Army	Röntgenology *
Caylor, C C	1029 Vermont Ave NW	Diagnostic roent
Christie A C	1835 Eye St. NW	Radiology
Coe Fred O	1835 Eye St, NW	Radiology
Edward Joseph F	1726 Eye St NW	Röntgenology
Groover T A	1835 Eye St NW	Radiology
Kellogg, Douglas S	Walter Reed General Hosp	Röntgenology *
Lattman, Isidore	1835 Eye St, NW	Radiology
McPeak Edgar M	1835 Eye St, NW	Radiology
Merritt E A	1835 Eye St NW	Radiology
Minehart, V L	2650 Wisconsin Ave	Radiology
Moore A B	1835 Eye St NW	Radiology
Moore Claude	815 Connecticut Ave	Röntgenology
Moore John J	Army Medical School	Röntgenology *
Otell L S	1835 Eye St NW	Radiology
Sappington E F	1103 16th St, NW	Röntgenology

## FLORIDA

<b>Clearwater</b>		
Brown Harold O		Röntgenology
<b>Fort Lauderdale</b>		
Hendricks, E M	Sweet Bldg	Radiology
<b>Jacksonville</b>		
Cunningham L W	117 W Duval St.	Röntgenology *
McEuen H B	126 W Adams St	Röntgenology *
Shaw W McL	117 W Duval St	Röntgenology *
<b>Lakeland</b>		
Weed, Walter A	Lakeland Hills Blvd	Röntgenology
<b>Miami</b>		
Cleghorn Charles D	168 SE 1st St	Röntgenology
Lucinlan Joseph H	168 SE 1st St	Radium therapy
Raap Gerard	168 SE 1st St	Röntgenology *
<b>Miami Beach</b>		
Payton Frazier J		Diagnostic roent
<b>Ocala</b>		
Moore J N		Radium therapy
<b>Orlando</b>		
Pines John A	108 E Central Ave	Diagnostic roent
<b>St Petersburg</b>		
Feaster O O	11th St and 7th Ave	Radiology
Herring John A	342 3d Ave N	Diagnostic roent
<b>Sanford</b>		
Marshall C J	212 E 1st St	Radiology
<b>Tampa</b>		
Allen Bundy	706 Franklin St	Röntgenology *
Dickinson J C	706 Franklin St	Röntgenology *
<b>West Palm Beach</b>		
Herpel, Fredk K.	N Dixie Ave	Diagnostic roent.

## GEORGIA

<b>Americus</b>		
Pendergrass, R C		Röntgenology *
<b>Atlanta</b>		
Clark, James J	478 Peachtree St N. E	Röntgenology
Hall O D	East Ave and N Boulevard	Radium therapy
Lake Wm F	384 Peachtree St N E	Röntgenology *
Landham J W	139 Forrest Ave, N E	Röntgenology
Moore Harvard C	Station Hospital Fort	Radium therapy
McPherson		Röntgenology
Rayle Albert A	36 N Butler St	Röntgenology
Stewart Calvin B	36 N Butler St	Radium therapy
<b>Augusta</b>		
Holmes L P	753 Broad St	Röntgenology

## 417

NUMBER 6

NAME			ADDRESS			TYPE OF SERVICE			NAME			ADDRESS			TYPE OF SERVICE		
Savannah									Ottawa								
Cole Wm. A.			24 E. Taylor St			Roentgenology			Pettit Roswell T			728 Columbus St			Diagnostic roent		
Corson Eugene R.			10 W Jones St			Roentgenology *			Peoria								
Draue Robert			Liberty and Drayton Sts.			Roentgenology			Goodwin P B			530 N Glen Oak Ave			Radiology		
						Radium therapy			Magee H B			408 Main St.			Radiology		
						Roentgenology			Quincy								
McGee H H			14 E. Taylor St.						Belrne H P			648 Hampshire St.			Radiology		
Thomasville									Swanberg Harold								
Collins J J						Radiology			Rockford								
									Ackemann H. W			321 W State St.			Radiology		
IDAHO									Springfield								
Boise									Hilt Lawrence M.			105 S 5th St.			Roentgenology *		
Genoway Charles V			103 N 8th St.			Roentgenology *			O'Hara F S			403 E Capitol Ave			Radiology		
Lewiston																	
Johnson Paul W						Roentgenology *			INDIANA								
ILLINOIS									Crawfordsville								
Batavia									Sigmund H W			227 E Main St.			Radiology		
Mostrom H T						Diagnostic roent. Radium therapy			Evansville								
									Cleveland W R.			22 N W 4th St.			Radiology		
Beivdore						Diagnostic roent.			Meyer Keith T			600 Mary St.			Diagnostic roent.		
Algure Alden									Fort Wayne								
Bloomington									Rodriguez Juan			2902 Fairfield Ave			Radiology		
Cantrell Thomas D			310 E Jefferson St			Radiology			Steele M. F			118 E Berry St.			Diagnostic roent.		
Grois Henry W			219 N Main St.			Radiology			Truelove A O			347 W Berry St.			Radiology		
									Van Buskirk E M.			347 W Berry St.			Radiology		
Chicago									Frankfort								
Arena Robt A.			2839 Ellis Ave.			Radiology			Chittick A. G			206 E Walnut St.			Roentgenology		
Bellin David S			411 Garfield Ave.			Radiology			Gary								
Blackmarr Frank H.			25 E Washington St.			Roentgen therapy			Dietrich Paul H			2006 W 4th Pl			Roentgenology		
						Radium therapy			Hammond								
Drams Julius			55 E Washington St.			Roentgenology			Rauschenbach C W			5245 Hohman Ave			Roentgenology		
Brown Wm L			53 E Washington St.			Radium therapy			Indianapolis								
Capp Charles S			6128 Ingleside Ave			Radiology			Beeler Raymond C			23 E Ohio St.			Radiology		
Case James T			180 N Michigan Ave			Radiology			Collins James N			23 E Ohio St.			Radiology		
Casselas P R			1625 E 53d St			Roentgenology			Lochry R. L.			Fall Creek Blvd and Ill- nois St.			Roentgenology		
Challenger C J			3117 Logan Blvd			Roentgenology			Ochsner Harold C			Capitol Ave and 16th St.			Radiology		
Cook Carroll E			30 N Michigan Ave			Roentgenology *			Smith Lester A.			23 E Ohio St.			Roentgenology *		
Crowder Earl R			303 E Chicago Ave			Roentgenology			Stayton Chester A			23 E Ohio St.			Radiology		
Culpepper Wm L			1180 E 83d St.			Roentgenology			Wright Cecil S			1076 W Michigan St.					
Cushway B C			7732 S Halsted St.			Diagnostic roent.			Kokomo								
Cuttrera Peter			501 N Halsted St.			Roentgenology			Ferry Paul W			224 N Main St			Diagnostic roent.		
Damiani Joseph			787 Milwaukee Ave			Diagnostic roent.			LaFayette								
Davis H. E.			2548 Lake View Ave.			Roentgenology			McClelland D C			303 N 8th St.			Roentgenology *		
Dick Paul G			55 E Washington St.			Roentgenology			Michigan City								
Ford Charles			8017 Luella Ave			Radium therapy			Martin F V			501 Pine St.			Radiology		
Ford Frances A			1006 Maypole Ave			Roentgenology			Muncie								
Gilmore Wilbur H			185 N Wabash Ave			Roentgen therapy			Moore P D			Jackson and High Sts.			Radiology		
Grubbe Emil H			6 N Michigan Ave			Radiology			New Castle								
Hartung Adolph			25 E Washington St.			Roentgen therapy			Iterman Geo E			1319 Church St.			Roentgenology		
Hodges Paul C			928 E 50th St			Radiology			Plymouth								
Hubert M J			25 E Washington St			Roentgenology			Knott Harry								
Jenkinson David L			1831 Wilson Ave			Roentgenology *			Shelbyville								
Jenkinson E L			1439 S Michigan Ave			Radiology			Inlow Herbert H.			2 W Washington St.			Diagnostic roent.		
Kaplan Maurice L			3837 W Roosevelt Rd			Radiology			South Bend								
Landau George M.			680 Groveland Park			Roentgenology			Fisher Lawrence F			105 E Jefferson Blvd.			Roentgenology *		
Larkin A James			25 E Washington St			Radium therapy			Terre Haute								
Litschel Joseph J			531 Grant Pl			Roentgenology			Pierce H. J			627 Cherry St.			Radiology		
Meier Roe J			7752 S Halsted St.			Radiology			Union City								
McClure C F			25 E Washington St.			Roentgenology			Beld Robert W								
Olga Harry A.			6058 Drexel Blvd			Roentgenology			Valparaiso								
Orndoff B H			2361 N Clark St.			Radiology			DeWitt C H.						Diagnostic roent.		
Potter Hollis E			122 S Michigan Ave.			Roentgenology			Vincennes								
Rose Cassio Belle			1753 W Congress St			Roentgenology			Moore Robert G			21 N 3d St.			Roentgenology		
Royer Don J			841 E 63d St.			Roentgenology											
Tichy L. S			3200 W 22d St.			Radiology											
Trostler I S			25 E Washington St.			Roentgenology											
Wanninger W J			9116 Exchange Ave			Radiology											
Warden R H			1044 \ Francisco Ave			Roentgenology											
Warfield C H			Wood and Harrison Sts			Roentgenology											
Willy R G			2748 W Foster Ave			Roentgenology											
Danville																	
Allison Otis W			41 \ Vermillion St			Radium therapy			IOWA								
Archibald James S			602 Green St.			Roentgenology			Anamosa								
Dunham L H			139 N Vermillion St			Radiology			Bawson E G								
Decatur									Atlantic								
Ellis Kauntleroy			220 S Webster St			Radiology			Greenleaf W S								
Deersfield									Belle Plaine								
Davis Charles J						Roentgenology			Newland Don H.								
East St. Louis									Cedar Rapids								
Lehternacht A C			129 N 8th St.			Radiology			Erskine Arthur W								
Evanson									Gillies Carl L.								
Alexander William G			636 Church St.			Radiology			120 3d Ave S E								
Conky Bernard M.			353 Rldge Ave			Roentgenology			Council Bluffs								
Lerry Gentz			636 Church St			Radiology			Hawkins Emmet L								
Galesburg									Des Moines								
Cunning R E. Lee			64 S Prairie St.			Radiology			Burcham Thos A.								
Great Lakes									Dubuque								
Owen J P			U S Naval Hospital			Roentgenology			Webb Harold H.								
Highland Park									Eagle Grove								
Jacks R. H.			2 \ Sheridan Rd.			Diagnostic roent.			Christensen John R.								
Jacksonville									Independence								
Drouse Iran E.			316 W State St.			Roentgenology *			Shellito J C.								
Joliet									Iowa City								
Houston Alfred M.			201 \ Chicago St.			Roentgenology			Gibbon W H.								
Liscola									Kerr H Dabney								
Hagens Frank M.			400 Broadway			Radium therapy			Iowa St								
Mattoon									Iowa St								
Mirian Chas. L.			213 \ 17th St.			Roentgenology			LeMars								
Mount Carmel									Larsen W W								
Ellis Harold A.						Roentgenology			Marshalltown								
Mount Vernon									Talley Louis F								
McCl Lizer M			1001 1/2 Broadway			Roentgenology			Main St. and 3d Ave.								
Oak Park									Chandler Orrville B								
Payne Frank J			315 \ Austin Blvd.			Radiology			Ottumwa								
Olney									Herrick John F								
We James A.						Diagnostic roent. Radium therapy			Spelman H. A.								
									103 S Market St.								
									Waterloo								
									Britt Otis W								
									521 Sycamore St.								
									Radiology								



NAME	ADDRESS	TYPE OF SERVICE	NAME	ADDRESS	TYPE OF SERVICE
<b>KANSAS</b>			<b>MASSACHUSETTS</b>		
Beloit			Frederick		
Vallette H B		Diagnostic roent.	Derr John S	35 E Church St.	Roentgenology *
Eldorado			Hagerstown		
Dinsmore, W S	324 W Central St	Diagnostic roent	Hoffmeyer, F N	Kling and Antietam Sts	Roentgenology
Ellsworth			Perry Point		
Hissem H Z		Diagnostic roent	Moxness, B A	Veterans Administration Hospital	Roentgenology
Fort Scott			<b>MASSACHUSETTS</b>		
Prichard, J R	209 S Main St	Radiology	Boston		
Kansas City			Blackett Chas W	35 Bay State Road	Roentgenology
Allen, Lewis G	601 Minnesota Ave	Radiology	Butler, P F	35 Bay State Road	Radiology
Tice Galen M	3818 Cambridge St	Radiology	Coffin W K	416 Marlboro St	Roentgenology
Lawrence			Ellsworth S W	520 Beacon St.	Roentgenology
Jones, H T	107 E 8th St.	Diagnostic roent.	Friedman Harry F	270 Commonwealth Ave	Radiology
Salina			George, Ariel W	43 Bay State Rd	Roentgenology
Brittain, O R	105 S 7th St.	Roentgenology	Hampton A O	Massachusetts Gen Hosp	Radiology
Topeka			Healy Thomas R	370 Marlborough St	Roentgenology *
Finney Guy A	901 Kansas Ave	Roentgenology	Holmes Geo W	265 Charles St	Radiology
Floersch, M A	700 Kansas Ave	Roentgenology	Leonard, Ralph D	43 Bay State Rd	Roentgenology
Owen, Arthur K	901 Kansas Ave	Roentgenology	Liebman Charles	311 Commonwealth Ave	Roentgenology
Wichita			MacMillan A S	483 Beacon St.	Roentgenology
Frost, E J	227 E Douglas Ave	Radiology	Martin, William C	Massachusetts General Hosp	Roentgenology
Swope Ople W	105 N Main St	Radiology	McCarthy, H L	479 Beacon St	Roentgenology
Webb, J A H	106 N Main St	Radiology	Meachen, John W	475 Commonwealth Ave	Roentgenology *
<b>KENTUCKY</b>			Moloney, Albert M	47 Bay State Rd	Radiology
Ashland			Morrison, Lawrie B	370 Marlborough St	Roentgenology *
Cooper, John Ralph	1540 Winchester Ave	Roentgenology *	O'Brien, Fredk W	465 Beacon St	Radiology
Lexington			Osgood, Herman A	144 Commonwealth Ave	Roentgenology *
Harding Donnan B	190 N Upper St	Radiology	Ott George J	344 Commonwealth Ave	Roentgenology
Lewis John C	159 W Main St	Roentgenology	Perkins Roy S	520 Commonwealth Ave	Roentgenology
Thompson J Campbell	207 N Upper St	Roentgenology	Ritvo, Max	485 Commonwealth Ave	Radiology
Louisville			Robins Samuel A	636 Beacon St	Roentgenology
Bell, J C	332 W Broadway	Radiology	Sosman M C	721 Huntington Ave	Roentgenology *
Enfield, Chas D	332 W Broadway	Radiology	Vance R G	204 Beacon St	Roentgenology
Fugate I T	608 S 4th St	Radiology	Vogt E C	300 Longwood Ave	Roentgenology
Herrmann Henry C	608 S 4th St	Radiology	Watts Henry F R	6 Monadnock St Dor	Diagnostic roent.
Johnson Sydney E	101 W Chestnut St	Roentgenology	Wheatley Frank E	520 Beacon St	Roentgenology
Keith D Y	412 W Chestnut St	Radiology	Whelan, Charles	395 Commonwealth Ave	Radiology
Keith, J P	412 W Chestnut St	Radiology	Brockton		
Owensboro			Packard Loring B	305 Prospect St	Roentgenology
Gillim P D	415 St Ann St	Roentgenology	Brookline		
Shelbyville			Bogan, Isabel K	193 Aspinwall Ave	Roentgenology
Bayless, B W		Roentgenology	Chelsea		
Winchester			Hutchinson, R W	U S Naval Hospital	Roentgenology
Browne I H		Diagnostic roent	Dalton		
<b>LOUISIANA</b>			Sullivan, P J		Roentgenology
Alexandria			Fall River		
Barker H O	327, 3d St.	Roentgenology	Lindsey John H	151 Rock St.	Roentgenology
Baton Rouge			Tennis, M N	538 Prospect St	Radiology
Williams, Lester J	221, 3d St.	Radiology	Fitchburg		
Houma			Jennings Curtis H	82 Mechanic St	Roentgenology
St Martin, T I		Roentgenology	Haverhill		
Mansfield			McFee William D	345 Main St	Roentgenology
Curtis, H P D		Roentgenology	Popoff Constantine	26 Summer St	Roentgenology *
Monroe			Sproull, John	50 Merrimack St	Radiology
Moore, Daniel M	128 De Slard St	Roentgenology	Holyoke		
New Orleans			Harrington Elmer J	199 Chestnut St.	Roentgenology *
Ané, J Novell	921 Canal St	Roentgenology	Lawrence		
Bowle E R	3503 Prytanla St	Radium therapy	Burgess Charles J	37 Whitman St	Radiology
Fortler, L A	2000 Tulane Ave	Radiology	Leary, Alfred J	477 Essex St	Roentgenology
Gately, T T	2000 Tulane Ave	Radiology	Lowell		
Granger, Amédée	921 Canal St	Roentgenology	Mehan, Joseph A	4 Park St	Roentgenology
Henderson W F	3500 Prytanla St.	Radiology	Stewart, Ralph C	226 Central St.	Roentgenology
Menville, L J	921 Canal St	Radiology	Malden		
Samuel E C	3503 Prytanla St.	Radiology	Warren, Alva H	6 Pleasant St	Roentgenology
Shreveport			New Bedford		
Anderson Johnson R	1130 Louisiana Ave	Roentgenology *	Bonnar, James M	90 Hillman St.	Roentgenology
Barrow, S C	624 Travis St.	Radiology	North Adams		
Edwards, H G F	624 Travis St.	Roentgenology	Bunce James W	85 Main St.	Roentgenology
Harwell, W R	624 Travis St.	Radiology	Crawford J W	191 E Main St	Radiology
Rutledge, C P	1030 Highland Ave	Radiology	Northampton		
Thomas, A. Jerome	624 Travis St	Roentgenology	Janes Benjamin F	211 Elm St	Roentgenology
<b>MAINE</b>			Somerville		
Auburn			Blake, Allen H	81 College Ave, W Som	Roentgenology
Cunningham, C H	60 Goff St	Diagnostic roent.	Springfield		
Bangor			Davis Ernest L.	20 Maple St.	Roentgenology
Ames, Forrest B	439 State St	Roentgenology	Horrigan A J	20 Maple St	Roentgenology
Hunt, Barbara	224 State St	Radiology	Jackson Howard L	146 Chestnut St	Roentgenology
Portland			Powers Richard T	25 Maple St	Radiology
Cummings, Edson S	12 Pine St.	Diagnostic roent.	Van Allen, Harvey W	19 Maple St.	Radiology
Lamb Frank W	131 State St.	Diagnostic roent	Webster		
Thaxter Langdon 1	22 Arsenal St	Roentgenology	Bragg Leslie R	260 Main St.	Diagnostic roent.
Waterville			Worcester		
Goodrich, John P	214 Main St.	Diagnostic roent	Cook Phillip H	27 Elm St	Roentgenology
<b>MARYLAND</b>			Langill, Morton H	36 Pleasant St	Radium therapy
Baltimore			<b>MICHIGAN</b>		
Ashbury Howard E	101 Read St.	Roentgenology *	Adrian		
Baetjor Fredk H	4 E Madison St	Roentgenology	Chase A W	130 Toledo St.	Diagnostic roent
Burnam Curtis F	1418 Eutaw Pl	Radiology	Ann Arbor		
Evans John	101 Read St	Roentgenology	Donaldson, Samuel W	326 N Ingalls St	Roentgenology
Foldman Maurice	2425 Eutaw Pl	Roentgenology *	Hodges Fred J	University of Michigan	Roentgenology
Hill Eben C	Johns Hopkins Med. Sch.	Roentgenology *	Jacox Harold W	1116 Lincoln Ave	Radiology
Kahn Max	2 W Read St	Roentgenology *	Pelree Carleton B	1313 E Ann St	Radiology
Ostro, Marcus	1310 Eutaw Pl	Diagnostic roent	Battle Creek		
Pierston, J W	1107 St Paul St	Roentgenology	Gorsline C S	29 W Michigan St	Roentgenology
Sax Benjamin J	2237 Eutaw Pl	Roentgenology	Kolvoord Theodore	25 W Michigan St	Roentgenology
Walton, Henry J	104 W Madison St	Diagnostic roent	Upson W O	North Ave and Emmett St	Roentgenology
Waters, Charles A	1100 N Charles St	Roentgenology	Bay City		
Wright, Harold E	101 Read St.	Diagnostic roent	Moffatt, Francis J	16th and Franklin Sts	Roentgenology
Crisfield			Detroit		
Collins C E		Roentgenology	Berris J M	10 Peterboro St.	Diagnostic roent
Cumberland			Birkelo Carl C	28 W Adams Ave	Roentgenology
Cowherd F G	122 S Centre St	Roentgenology			
Easton					
Hammond, William T		Roentgenology			

NAME			ADDRESS			TYPE OF SERVICE		
Bloom Arthur R	5057 Woodward Ave	Roentgenology	Joplin					
Chene George C	1551 Woodward Ave	Roentgenology	McGaughey H. D	607 Main St.	Radiology			
Dempster Jas H	5761 Stanton Ave	Diagnostic roent.	Kansas City					
Dickson B R	337 W Grand Blvd	Roentgen Therapy	Dann David S	306 E 12th St.	Roentgenology			
		Radium Therapy	Deweese E R	904 Grand Ave	Roentgenology			
Doub Howard P	379 W Grand Blvd	Radiology	Donaldson Clyde O	1103 Grand Ave	Radiology			
Elsen Paul	258 S Algonquin St	Roentgen therapy	Lockwood Ira H	304 E 12th St.	Radiology			
		Radium therapy	McCandless O H	308 E 12th St.	Roentgenology			
Evans Wm. A.	10 Peterboro St.	Radiology	McDermott J L	1103 Grand Ave	Radiology			
Hall E Walter	10 Peterboro St	Radiology	Skinner Edward H.	1103 Grand Ave	Radiology			
Hasley Clyde K	1553 Woodward Ave	Radiology	Viriden C E	1103 Grand Ave	Radiology			
Jarre Hans A	1551 Woodward Ave.	Radiology	St. Joseph					
Kenning J C	1551 Woodward Ave.	Roentgenology	McGlothlin A. B	824 Edmond St.	Roentgenology *			
Leucutia Tralan	10 Peterboro St	Radiology	Rayold Henry J	401 N 6th St	Radiology			
Lim W K.	2201 E Jefferson Ave	Radiology	St Louis					
Loucks R. E	337 W Grand Blvd	Radiology	Ernst Edwin C	3720 Washington Ave	Radiology			
Minor Edward G	3001 W Grand Blvd	Roentgenology	McCutchen L G	508 N Grand Blvd.	Roentgenology *			
Reynolds Lawrence	10 Peterboro St.	Radiology	Moore Sherwood	600 S Kingshighway	Radiology			
Sanderson S E	5057 Woodward Ave	Radiology	Mueller Wilbur K.	607 N Grand Blvd	Roentgenology			
Shore O J	3001 W Grand Blvd	Roentgenology	Peden Joseph C	634 N Grand Blvd.	Roentgenology			
Stevens Rollin H	1551 Woodward Ave	Radiology	Sante L R	634 N Grand Blvd.	Radiology			
Ulbrich Henry L.	1122 E Grand Blvd	Roentgenology *	Spinzig Edgar W	503 N Grand Blvd.	Roentgenology			
Weaver Clarence E	113 Martin Pl.	Roentgenology *	Titterington P F	508 N Grand Blvd.	Roentgenology			
Wilcox Leslie F	10 Peterboro St	Radiology	Zink Oscar C	5535 Delmar Blvd	Roentgenology			
Witwer E R	3839 Brush St.	Radiology	Springfield					
Flint			Cole Paul F	200 Pershing Ave	Radiology			
Macduff R Bruce	112 W Kearsley St.	Roentgenology *	Webster Groves					
Grand Rapids			Kerrigan Joseph A	421 S Elm St	Diagnostic roent.			
Mences Thomas O	Wealthy St and Plymouth Rd	Radiology	Billings	MONTANA				
		Radiology	Bridenbaugh J H	208 N Broadway	Radiology			
Moore Vernor M.	110 E Fulton St	Radiology	Watkins C F	115 N 28th St.	Radiology			
Muller John H	26 Sheldon Ave	Radiology	Grant Falls					
Williams Alden H	26 Sheldon Ave	Radiology	Walker Dora	503 1st Ave. N	Roentgenology			
Jackson			Beatrice	NEBRASKA				
Cooley R M	524 Lansing Ave.	Roentgenology	Penner H G	113 S 5th St	Roentgenology *			
Kugler J C	1905 Grovedale Ave	Roentgenology	Rush Weaver A	607 W Court St	Radiology			
Porter H W	1020 E Michigan Ave	Radiology	Grand Island					
Kalamazoo			Woodruff R C	306 1/2 N Locust St.	Roentgenology			
Crane A W	420 S Rose St.	Roentgenology *	Hastings					
Jackson John B	420 S Rose St.	Roentgenology *	Rork Les W	119 N Hastings Ave.	Roentgenology *			
Lansing			Lincoln					
Davenport Carroll S	1210 W Saginaw St	Roentgenology *	Kall Carl	1307 N St	Roentgenology *			
Huntley Fred M	908 N Capitol Ave	Roentgenology	Rowe Edward W	128 N 13th St.	Radiology			
Monroe			Smith Roscoe L	1307 N St.	Radiology			
Moll T M.	120 Maple Blvd.	Diagnostic roent.	Omaha					
Pontiac			Fouts Roy W	107 S 17th St	Radiology			
Church J E	35 W Huron St.	Roentgenology	Hardy Clyde C	101 S 17th St.	Roentgenology			
Pool H H	35 W Huron St.	Roentgenology	Hunt Howard B	42d and Dewey Ave	Roentgenology			
Saginaw			Kelly J F	107 S 17th St.	Radiology			
Anderson Wm K	316 S Porter St.	Diagnostic roent.	Orengaard A P	107 S 17th St	Roentgenology			
St Johns			Ross W L	407 S 16th St	Roentgenology			
Ho T Y		Diagnostic roent.	Tyler Albert F	103 S 17th St	Radiology			
Traverse City			Scottsbluff					
Minor E B	208 1/2 E Front St.	Diagnostic roent.	Plehn Frank W	1818 Broadway	Roentgenology			
Ypsilanti			Reno	NEVADA				
Pillsbury Chas R	23B N Washington St.	Diagnostic roent.	Piersall C E.	120 N Virginia St.	Radiology			
Duluth	MINNESOTA		Concord	NEW HAMPSHIRE				
Clement Gage	901 E 1st St	Radiology	Eveleth Fred S	12 Court St.	Roentgenology			
McNutt John R	3d St. and 5th Ave E	Roentgenology	Dover					
Mankato			Chesley Harry O	507 Central Ave	Roentgenology			
Wentworth A J	Main and Broad Sts	Radiology	Hanover					
Minneapolis			Sycamore Leslie K	2 Maynard St.	Radiology			
Allison R G	74 S 9th St.	Roentgenology *	Manchester					
Fleming A S	900 Nicollet Ave	Radium therapy	Merrill A. S	944 Elm St	Roentgenology			
Hansen Cyrus Owen	412 Delaware St S.E	Radiology	Nashua					
Harrington Chas D	78 S 9th St.	Radiology	Davis S G	168 Main St.	Roentgenology			
Nordita G T	74 S 9th St.	Roentgenology *	Rock T F	77 Main St	Diagnostic roent			
Ridler Leo G	412 Delaware St S E	Diagnostic roent.	Asbury Park	NEW JERSEY				
Sagel Jacob	412 Delaware St S E	Radiology	Herrman William G	501 Grand Ave	Radiology			
Sundt Mathias	2323 6th St S	Roentgenology	Atlantic City					
Udo Walter H	74 S 9th St.	Roentgenology *	Bradley Robert A	1616 Pacific Ave	Radiology			
Rochester			Kalghn Charles B	905 Pacific Ave	Roentgenology			
Bowling Harry H			Beachwood					
			Swan Guy Howard					
Camp John D	Mayo Clinic	Roentgenology	Camden					
Desjardins A. U	Mayo Clinic	Radium therapy	Roberts Joseph E.	403 Cooper St.	Roentgenology			
		Diagnostic roent	East Orange					
Fricke Robert E	Mayo Clinic	Roentgen therapy	Marquis W James	S Munn and Central Aves	Roentgenology			
Kirklin B R	Mayo Clinic	Radium therapy	Reitter George S	144 Harrison St.	Diagnostic roent			
Toddy Eugene T	Mayo Clinic	Radium therapy	Elizabeth					
Sutherland Charles G	Mayo Clinic	Diagnostic roent	Voel Herbert A.	1060 E Jersey St	Diagnostic roent.			
Weber Harry M	Mayo Clinic	Diagnostic roent.	Ward Leo J	137 W Jersey St.	Radiology			
St Cloud			Englewood					
Kru M J	St Cloud Clinic Bldg	Roentgenology *	Edwards J Bennett	Engle St.	Roentgenology			
St. Paul			Flemington					
Aurelius J R.	300 St. Peter St	Roentgenology *	Tompkins G B					
Schons Edward	25 W 4th St	Radiology	Hoboken					
			Brooser Henry Y	105 Newark St.	Roentgenology			
Gulfport	MISSISSIPPI		Jersey City					
Van Ness I dwain B	1005 32d Ave	Roentgenology	Mayer William W	532 Bergen Ave.	Roentgenology			
Houston			Leibenz Harry J	521 Bergen Ave.	Roentgenology			
Williams J Mce			Montclair					
Laurel			Schmidelpfenning, R. D	65 N Fullerton Ave.	Roentgenology			
McCormick H G	531 7th St.	Roentgenology	Stevens J Thomp on	55 Park St.	Radiology			
McComb								
Rickett M D	Maryland and 4th Sts.	Diagnostic roent.						
Natchez								
Rockman Marcus	207 Franklin St.	Diagnostic roent.						
Columbia	MISSOURI							
Wm. L.	S 4th St	Radiology						
Hol es								
Wm. L.								

NAME	ADDRESS	TYPE OF SERVICE	NAME	ADDRESS	TYPE OF SERVICE
<b>Newark</b>			<b>Hempstead</b>		
Baker, Charles F	198 Clinton Ave	Roentgenology *	Robin, Nathaniel H	131 Fulton Ave	Roentgenology
Friedman, Milton	31 Lincoln Park	Roentgen therapy	Williams, P A	131 Fulton Ave	Roentgenology *
Furst Nathan James	190 Johnson Ave	Radium therapy	<b>Hornell</b>		
Gelber, Louis J	41 Lincoln Ave	Roentgenology *	Mitchell, George W	208 Main St	Roentgenology
Hood Philip G	19 Lincoln Park	Roentgenology	<b>Hudson</b>		
May Ernst A	965 Broad St	Diagnostic roent	Harris, Rosslyn P	427 Warren St	Diagnostic roent.
Pomeranz, Raphael	31 Lincoln Park	Radiology	<b>Ithaca</b>		
Reisman Erwin	31 Lincoln Park	Roentgenology *	Larkin, Leo P	114 N Tioga St	Radiology
Wyatt, Joseph H	135 Clinton Ave	Diagnostic roent	<b>Lackawanna</b>		
<b>Passaic</b>			Cotter, Stephen V	1457 Abbott Rd	Roentgenology
Terhune, Percy H	171 Paulison Ave	Roentgenology	<b>Mechanicville</b>		
<b>Paterson</b>			Green Geo A		Diagnostic roent
Golding, Harry N	180 Carroll St.	Roentgenology	<b>Middletown</b>		
Roemer, Jacob	213 Broadway	Radiology	Schmitz Walter A	18 Highland Ave	Roentgenology
<b>Perth Amboy</b>			<b>Mount Kisco</b>		
Klein, Edward F	136 Market St	Radiology	Vaughan, F E		Diagnostic roent
<b>Rochelle Park</b>			<b>Newburgh</b>		
Pallen, C de S		Radium therapy	Miller, Raymond A	212 Grand St	Diagnostic roent
<b>Succasunna</b>			Reed, Charles B	205 Liberty St	Roentgenology
Plume, C A		Diagnostic roent	<b>New Rochelle</b>		
<b>Summit</b>			Duckworth Willard D	421 Huguenot St	Roentgenology
Tidback, John D	382 Springfield Ave	Roentgenology	Chilko Alexander J	41 Halcyon Terrace	Roentgenology *
<b>Trenton</b>			<b>New York City</b>		
Davison, R Winthrop	200 W State St.	Radiology	Abbott Hodson A	622 W 168th St.	Roentgenology
			Arons Isidore	133 E 58th St	Roentgen therapy
<b>Albuquerque</b>	<b>NEW MEXICO</b>		Bendick Arthur J	100 E 94th St	Radium therapy
Warden M R	715 E Grand Ave	Diagnostic roent.	Besser, Herman	66 E 59th St	Radiology
			Boone, Wm H	230 Riverside Dr	Roentgenology
<b>Albany</b>	<b>NEW YORK</b>		Bower, Jacob	133 E 58th St.	Roentgenology *
Howard W P	46 Willett St	Roentgenology	Busby, Archibald H	133 E 71st St	Diagnostic roent.
Murnane I J	182 Washington Ave	Radiology	Cameron William H	511 Fifth Ave	Radium therapy
Prentice, D D	59 Clinton Ave	Radiology	Carty, John R	525 E 68th St	Roentgenology
<b>Amsterdam</b>			Cole Lewis Gregory	36 E 61st St	Roentgenology *
Wilson David	156 Guy Park Ave	Roentgenology	Dieffenbach W H	30 Central Park West	Radiology
<b>Auburn</b>			Dixon, Geo S	218 2d Ave	Diagnostic roent
Austin Sedgwick D	54 E Genesee St	Diagnostic roent	Duffy, James J	2 W 106th St.	Roentgen therapy
Bull Harry S	156 Genesee St	Roentgenology	<b>Ehrlich David Ernest</b>		
<b>Bay Shore</b>			Ferguson, A B	27 W 86th St	Radium therapy
Cohoon, Carl Wm	72a S Clinton Ave	Roentgenology	Fierstein, Jacob	420 E 59th St	Radiology
<b>Binghamton</b>			Fleuman, Solomon	1018 E 163d St	Roentgenology *
Kann, Ulysses S	69 Walnut St	Radiology	Francis William J	133 E 58th St	Diagnostic roent
Shaw, Perry H	93 Main St	Diagnostic roent	Fried, Herman	121 Madison Ave	Roentgenology
<b>Brooklyn</b>			Fried Jacob R	1049 Park Ave	Radiology
Bayles, William H	1901 Bedford Ave	Diagnostic roent	Fried, Herman	320 W 87th St	Roentgenology *
Bell, A L Loomis	340 Henry St.	Radiology	Friedland, Henry	2021 Grand Concourse	Diagnostic roent.
Cramp George W	508 6th St	Diagnostic roent.	Friedman, Lewis J	315 E 18th St	Roentgenology
Currin Francis W	1136 Dean St	Radiology	Friedman Max	1940 Grand Concourse	Diagnostic roent
Dannenberg, Max	1464 Eastern Parkway	Roentgenology	Friedmann Joseph	53 W 73d St.	Radiology
Eastmond Charles	483 Washington Ave	Roentgenology *	Froehlich Eugene	28 W 74th St	Roentgenology
Ehrenpreis, B	578 Eastern Parkway	Roentgenology	Glassman I	138 E 36th St	Diagnostic roent
Lillott, F E	122 76th St	Diagnostic roent	Golden Ross	622 W 168th St	Roentgenology
Friedmann Asa B	41 Eastern Parkway	Radiology	Gottlieb Charles	210 W 79th St	Roentgenology
Gold Louis	835 Willoughby Ave	Diagnostic roent	Groeschel L B	40 W 72d St	Radiology
Goldfarb L	608 Ocean Ave	Diagnostic roent	Herendeen Ralph E	30 E 40th St.	Roentgenology *
Goodman Moses	2100 66th St.	Radiology	Hirsch, Henry	2075 Grand Concourse	Radiology
Held Louis A	175 Hewes St.	Roentgenology *	Hirsch, I Seth	136 E 64th St.	Radiology
Howes William E	152 Clinton St	Roentgenology	Howard J Campbell	40 E 61st St	Roentgenology *
Ingraham, Ruth	121 DeKalb Ave	Diagnostic roent	Imboden Harry M	30 W 59th St	Radiology
Kaufman Julius	201 Eastern Parkway	Roentgenology	Jacobs Alexander W	40 W 72d St.	Roentgen therapy
Krupp D Dudley	178 Pennsylvania Ave	Roentgenology *	Jaches Leopold	100 E 94th St	Radium therapy
Levine, Isaac	1210, 40th St	Diagnostic roent	Johnson Redford K	30 E 40th St	Diagnostic roent
Liberson, F	612 Eastern Parkway	Diagnostic roent.	Kaplan Edward E	103 E 29th St	Diagnostic roent
Masterson, John J	401, 76th St	Diagnostic roent.	Kaplan, Ira I	55 E 86th St	Radium therapy
Mendelson Emanuel	132 Parkside Ave	Roentgenology	Kaplan Morris	130 Henry St	Diagnostic roent
Muller Fredk W	U S Naval Hospital	Roentgenology *	Kasabach Halg H	622 W 168th St	Radiology
Nathanson Louis	700 Ocean Ave	Radiology	Kassow Israel O	1840 Grand Concourse	Diagnostic roent.
Rendick, Richard A	116 Remsen St	Roentgenology	Kraft Ernest	120 W 70th St.	Roentgenology *
Schenck Samuel G	1538 President St	Diagnostic roent	Kurz Bernard	1235 Grand Concourse	Diagnostic roent
Schiff, Charles H	1000 Park Pl	Diagnostic roent	Landsman I J	391 E 149th St	Diagnostic roent
Sogall, L Martin	4701 15th Ave	Roentgenology *	Lapman Charles	2754 Grand Concourse	Diagnostic roent
Strahl Milton I	253 New York Ave	Diagnostic roent.	Law Frederick M	140 E 54th St	Diagnostic roent
Taormina, Louis J	1093 Gates Ave	Roentgenology	Lefrak Louis	251 E Broadway	Diagnostic roent
Teperson H I	744 Eastern Parkway	Radiology	Lenz Maurice	1049 Park Ave	Roentgen therapy
Wasch Milton G	871 Park Pl	Radiology	Levin Isaac	57 W 57th St	Radium therapy
Weinstein Samuel	1138 Eastern Pkwy	Roentgenology *	LeWald L I	140 E 54th St	Radiology
Westing Siegfried	180 Lenox Rd	Diagnostic roent.	Lewis Raymond W	115 E 61st St	Roentgenology
<b>Buffalo</b>			Merrill E Forrest	30 W 59th St	Diagnostic roent
Barnes John M	875 Lafayette Ave	Roentgenology	Meyer, William Henry	20th St. and 2d Ave	Roentgenology *
Bayliss J W	472 Delaware Ave	Roentgenology *	Ossip Abraham	152 Henry St.	Diagnostic roent
DeGraft, Ralph M	131 Linwood Ave	Diagnostic roent	Phillips Herman B	9 W 68th St	Radiology
Glan-Franceschi J S	610 Niagara St	Diagnostic roent	Pomeranz M M	911 Park Ave	Radiology
Helminiak M J	929 Fillmore Ave	Diagnostic roent	Posner Herman Paul	467 E 138th St.	Diagnostic roent
Koenig Edward C	100 High St	Diagnostic roent	Powell C B	2368 7th Ave	Diagnostic roent
Lape, C Pearley	183 Oxford Ave	Diagnostic roent.	Quimby Adoniram J	5 E 57th St	Roentgenology
Levy Sidney H	33 Allen St	Diagnostic roent.	Radding Moses B	545 West End Ave	Roentgenology *
Levyn, Lester	40 North St	Roentgenology	Reiner, John	200 W 59th St	Roentgen therapy
Moses Chester D	333 Linwood Ave	Diagnostic roent	Robinson G Allen	2 E 77th St.	Radium therapy
Orr, Clifford R	1093 Ellicott St	Roentgenology *	Robinson, William T	322 W 72d St	Roentgenology
Schreiner, B F	113 High St	Radiology	Ryan, E J	421 W 113th St	Roentgenology
Smith B B	333 Linwood Ave	Diagnostic roent	Schechter Samuel	315 W 86th St	Diagnostic roent
Thompson A W	135 Linwood Ave	Diagnostic roent	Scholz Thomas	38 E 85th St	Diagnostic roent
<b>Cooperstown</b>			Schwartz C W	33 E 68th St	Roentgenology
Cruttenden Harry L		Radiology	Schwartz Irving	1150 5th Ave	Diagnostic roent
<b>Cortland</b>			Spillman Ramsay	115 E 61st St	Diagnostic roent
Sornberger, Frank F	16 Church St	Roentgenology	Steiner Joseph M	170 East End Ave	Roentgenology *
<b>Elmhurst</b>			Stewart Wm H	222 W 79th St	Roentgenology
Startz, Irving S	40-16 Gleane St.	Roentgenology *	Swenson Paul C	622 W 168th St	Diagnostic roent
<b>Elmira</b>			Taylor Henry K	333 West End Ave	Diagnostic roent
Bennett, John A	222 W Church St	Roentgenology	Unger Arthur S	135 E 74th St	Roentgenology
<b>Far Rockaway</b>			Valenti Mestre A	129 Broad St	Roentgenology
Lesoff Morris J	858 Central Ave	Roentgenology *	Weinberg Tobias B	310 E 15th St	Roentgenology
Rivkin, Hyman	918 Cornaga Ave	Diagnostic roent	Weiss Leopold D	36 W 59th St	Roentgenology
<b>Glen Falls</b>			Weitzner Samuel F	1018 E 163d St	Radiology
Birdsall Edgar	140 Glen St	Roentgenology	White Stephen	57 W 57th St	Roentgenology
<b>Gloversville</b>			Wood Francis C	421 W 113th St	Roentgen therapy
Denham, H C	12 Prospect Ave	Roentgenology	<b>Niagara Falls</b>		
			Scott Walter Roger	598 Pine Ave	Radiology

NAME	ADDRESS	TYPE OF SERVICE	NAME	ADDRESS	TYPE OF SERVICE
<b>Ossining</b>			<b>Cleveland</b>		
Wyser Dorean D	210 Spring St	Roentgenology	Bettelhelm Frederick	1020 Huron Rd	Radiology
<b>Oswego</b>			Farmer H. L.	10515 Carnegie Ave	Radiology
Layne Reuben	25 W Onelda St	Diagnostic roent.	Freedman Edward F	23 Prospect Ave N W	Roentgenology
Wallace H. M.	140 W 5th St.	Roentgenology	Freedman Eugene	3395 Scranton Rd	Roentgenology *
<b>Peekskill</b>			Hill Walter C	10515 Carnegie Ave.	Radiology
Snowden Fred A	108 Depew St.	Roentgenology	LeFevre Walter I.	9400 Euclid Ave	Roentgenology
<b>Port Chester</b>			Mahner H A	10515 Carnegie Ave	Roentgenology *
West Theodore	324 Westchester Ave	Radiology	May Raymond V	10515 Carnegie Ave.	Radiology
<b>Poughkeepsie</b>			May Robert J	10515 Carnegie Ave.	Radiology
Davison Chester O	Lincoln Ave and Reade Pl.	Radiology	McCoy Charles C	2085 Adelbert Rd	Roentgenology *
<b>Richmond Hill</b>			McNamee Edgar P	1422 Euclid Ave	Diagnostic roent.
Voltz Albert L.	11520 Myrtle Ave.	Radiology	Nichols B H	2020 E 93d St	Radiology
<b>Rochester</b>			Osmond John D	10515 Carnegie Ave	Radiology
Almy Max A	16 N Goodman St	Roentgenology	Portmann U V	2045 E 90th St.	Roentgen therapy
Davison Sol C	277 Alexander St.	Radiology			Radium therapy
Flynn James M	277 Alexander St.	Radiology	Steel David	2065 Adelbert Rd	Roentgenology
Fray Walter W	74 Marlborough Rd	Roentgenology *	Thomas M A	10515 Carnegie Ave	Radiology
Green Joseph H	277 Alexander St.	Roentgenology	West James H.	10515 Carnegie Ave.	Radiology
Sanders L J	213 Alexander St.	Roentgenology			
Thomas Camp C	476 Lake Ave	Roentgenology	<b>Columbus</b>		
Warren Stafford L.	199 Barrington St	Radiology	Bowen Chas F	332 E State St.	Radiology
<b>Saratoga Springs</b>			Fulton Huston F	327 E State St.	Roentgenology *
King Earl H	75 Caroline St.	Roentgenology	Kirkendall Ben R	137 E State St.	Roentgen therapy
<b>Syracuse</b>					Radium therapy
Callia Salvatore	510 Prospect Ave	Diagnostic roent.	Means Hugh J	683 E Broad St.	Radiology
Childs Donald S	713 E Genesee St	Roentgenology *	Miller W H.	328 E State St.	Radiology
Hadley Lee A	713 E Genesee St.	Roentgenology	Reinert Edward	247 E State St.	Radiology
Henry Lucas S	110 E Castle St.	Roentgenology	Riebel Frank A.	15 W Goodale St.	Roentgenology
Potter Carlton F	820 S Crouse Ave.	Roentgenology	Sims Geo P	W State St. and Davls Ave	Diagnostic roent.
Rullison Foster C	713 E Genesee St	Roentgenology	Weirauck H V	9 Buttes Ave	Roentgenology
<b>Troy</b>			<b>Dayton</b>		
Hull Thurman A	505 Broadway	Diagnostic roent.	Burnett Harry W	201 S Main St.	Radiology
<b>Utica</b>			Delscamp W H.	201 S Main St.	Roentgenology
Hall Robert C	258 Genesee St.	Roentgenology	Jones Lynn M	117 S Main St	Roentgenology *
Powers M. T	250 Genesee St	Roentgenology	Price Rudolph J	201 S Main St.	Radiology
<b>Watertown</b>			<b>Fremont</b>		
Pawling Jesse R	100 Stone St	Roentgenology	Philo D W	209 W State St.	Roentgenology
<b>White Plains</b>			<b>Gallipolis</b>		
Duckworth R. D	170 Maple Ave.	Roentgenology	Wilson Milo		Radiology
Sherman Herbert	99 Church St.	Roentgenology	<b>Hamilton</b>		
			Benzing George	R.D. 3	Radiology
			<b>Lakewood</b>		
			McDowell John R.	15701 Detroit Ave.	Roentgenology
			Shetter North W	14600 Detroit Ave.	Roentgenology
			<b>Lima</b>		
			Thomas Herbert A.	131 N Elizabeth St.	Radiology
			<b>Massillon</b>		
			Holston J D	876 Amherst Rd, N.E	Diagnostic roent.
			<b>Plaza</b>		
			Spencer Robert D	400 N Main St	Roentgenology
			<b>Salem</b>		
			Heck Stanton	1160 E State St.	Roentgenology
			<b>Sandusky</b>		
			Hill Lyle S	526 Columbus Ave.	Roentgenology
			<b>Springfield</b>		
			Brubaker E R	8 W Main St	Radiology
			Ultes Will	E High St. and Burnett Rd.	Roentgenology
			<b>Steubenville</b>		
			Miller J E	401 Market St.	Radiology
			<b>Toledo</b>		
			Kahn, Dalton	237 Michigan St.	Roentgenology
			Murphy John T	421 Michigan St.	Radiology
			<b>Warren</b>		
			Gauchat Paul C	197 W Market St	Roentgenology
			Simpson D G	775 Mahoning Ave N W	Roentgenology
			<b>Youngstown</b>		
			Bachman M. H	314 N Phelps St.	Roentgenology *
			Baker Edgar C	Youngstown Hospital	Radiology
			Heberding John	151 W Rayen Ave	Roentgenology
			Heeley J A.	Madison and Pennsylvania Aves	Roentgenology
			Meyer N N	23 Central Square	Diagnostic roent
			<b>Zanesville</b>		
			Holston J G F	620 South St.	Roentgenology
			Loebell Maurice A.	531 Market St.	Roentgenology *
			<b>Marlow</b>		
			Talley C N		Diagnostic roent.
			<b>McAlester</b>		
			Johnston James C	216 1/2 E Choctaw Ave	Roentgenology
			<b>Oklahoma City</b>		
			Heatley John E	119 N Broadway	Diagnostic roent.
			Myers Ralph Emerson	1200 N Walker St.	Radiology
			Roland Marlon M.	119 N Broadway	Radiology
			<b>Okmulgee</b>		
			Ming Charles M.	220 S Morton Ave.	Roentgenology
			<b>Shawnee</b>		
			Hughes J E	14 E. 9th St.	Diagnostic roent.
			<b>Sulphur</b>		
			Annadown P V		Radium therapy
			<b>Tulsa</b>		
			Larrabee W S	103 W 6th St	Diagnostic roent.
			Lherine Morris B	103 W 6th St.	Roentgenology
			Stuart Leon H.	7 W 6th St.	Diagnostic roent.
					Roentgenology
			<b>Eugene</b>		
			Barnett Arthur F	130 E Broadway	Roentgenology
			<b>Portland</b>		
			Butler Frank E	410 Taylor St.	Roentgenology
			Dixon William	193 11th St.	Diagnostic roent.
			Haworth Wallace	193 11th St.	Roentgenology
			Palmer Dorwin L	+32 Morrison St.	Radiology
			Rees Sherman E.	608 E. 31st St.	Roentgenology *
			Walker Ralph C.	364 Washington St.	Radiology
			Wight Otis B	193 11th St.	Radium therapy
			Woolley Ivan M.	410 Taylor St.	Roentgenology *
					Roentgenology *
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## PENNSYLVANIA

NAME	ADDRESS	TYPE OF SERVICE
<b>Allentown</b>		
Smyth Thos L	111 N 8th St	Radiology
Troxell, Wm C	941 Hamilton St	Radiology
<b>Altoona</b>		
Alleman, George E	1410 12th Ave	Roentgenology
Bliss Gerald D	1220, 13th Ave	Radiology
<b>Ashland</b>		
Mulligan, P B		Roentgenology
<b>Bethlehem</b>		
Leibert, H F	338 Wyandotte St.	Roentgenology
<b>Bryn Mawr</b>		
Bromer, Ralph S	Bryn Mawr Ave	Roentgenology
<b>Chester</b>		
Egbert, Walter E	601 E 13th St	Roentgenology *
Sharpe, A Maxwell	708 Sprout St	Roentgenology *
<b>Clearfield</b>		
Reiley, W E		Radiology
<b>Coatesville</b>		
Perkins, J A	367 Chestnut St	Diagnostic roent.
<b>Conshohocken</b>		
Burwill-Holmes, E		Diagnostic roent
<b>Danville</b>		
Hawley S J		Roentgenology *
<b>DuBois</b>		
Gann G W	49 E Long Ave	Roentgenology
McCormick, A F	Maple Ave	Roentgenology
<b>Easton</b>		
Parry Leo D	32 N 3d St	Radiology
Quiney, James J	309 Bushkill St	Radiology
<b>Erle</b>		
Putts, B Swayne	117 W 8th St	Roentgenology
<b>Greensburg</b>		
McMurray, H A	107 S Main St.	Roentgenology
Singer John J	229 S Main St	Roentgenology *
<b>Hanover</b>		
Bortner, C E	123 York St	Diagnostic roent
<b>Harrisburg</b>		
Ritzman A Z	234 State St	Roentgenology
<b>Hatboro</b>		
Shoemaker, Robt, 3d		Roentgenology
<b>Hazleton</b>		
Dessen Louis A	4 W Broad St	Roentgenology
<b>Huntingdon</b>		
Kelchline John M		Radiology
<b>Johnstown</b>		
Stewart, H M	406 Main St	Radiology
<b>Kingston</b>		
Howell, G L	204 Wyoming Ave	Roentgenology
<b>Lancaster</b>		
Davis, Henry B	530 N Lime St	Roentgenology
Snoke Paul O	129 College Ave	Radium therapy
Swab, Robert D	23 E Walnut St	Radiology
<b>Lebanon</b>		
Boger John D	341 Cumberland St	Diagnostic roent.
<b>Lewistown</b>		
Weaver, O M	12 S Main St	Roentgenology
<b>Lock Haven</b>		
Green Geo D		Roentgenology
<b>McKeesport</b>		
Snedden, A R	522 Walnut St	Roentgenology
<b>Meadville</b>		
Gingold, Joseph R	476 Pine St	Roentgenology
<b>New Castle</b>		
Cooper, J R	111 E North St.	Radiology
<b>New Kensington</b>		
Brown, Prentiss A	901, 5th Ave	Roentgenology
<b>Norristown</b>		
Campbell, Raymond F	514 Swede St	Diagnostic roent
<b>Perkasie</b>		
Strouse, O H		Roentgenology
<b>Philadelphia</b>		
Barker, Walter C	Chestnut and 20th Sts	Radiology
Bird G C	1415 W Erie Ave	Roentgenology
Bishop Paul A	8th and Spruce Sts	Radiology
Borzell Francis F	4940 Penn St	Roentgenology
Bowen David R	8th and Spruce Sts	Radiology
Bruck Samuel	2104 Pine St	Roentgenology
Carpenter, Samuel A	2265 N 10th St	Roentgenology
Chamberlain W L	3401 N Broad St	Radiology
Downs E E	Barnes and Hartel Sts	Radiology
Edelken Louis	1832 Spruce St	Roentgenology *
Farrell John T, Jr	235 S 15th St	Roentgenology
Feldstein Sidney L	1601 Walnut St.	Roentgenology *
Frank Jacob W	1730 Spruce St.	Roentgenology
Gershon Cohen J	255 S 17th St	Roentgenology
Henry Robert W	768 S 15th St	Roentgenology *
Hutton Frederick C	1409 N 15th St	Roentgenology *
Koenig Carl F	1734 Harrison St	Roentgenology
Kornblum Karl	3400 Spruce St	Radiology
Manges, Willis F	235 S 15th St	Roentgenology *
Merchant Albert K	3401 N Broad St	Roentgenology *
Miller Garrett R	1942 N Broad St	Radiology
Morgan, J D	2226 Delancey St	Radiology
Newcomet W S	3501 Baring St.	Roentgenology *
O Boyle Cyril P	4930 Walnut St.	Roentgenology *
Pancoast Henry K	3400 Spruce St	Radiology
Pendergrass Eugene P	3400 Spruce St	Radiology
Perclval M F	S Broad and Wolf Sts	Radiology
Pfahler, George E	1321 Spruce St	Roentgenology
Post Joseph W	1930 Chestnut St	Roentgenology *
Rieger, Chas L W	230 N Broad St	Roentgenology *

NAME	ADDRESS	TYPE OF SERVICE
Rosenbaum George	1521 Spruce St.	Radiology
Schmidt, Wm Henry	1601 Walnut St	Radiology
Sender Arthur C	1311 W Allegheny Ave	Roentgenology
Soils Cohen Leon	1923 Spruce St	Roentgenology
Spackman, E W	1824 Chestnut St	Roentgenology
Stull, H Tuttle	3260 N Broad St	Roentgenology
Sturr Robert P	1823 Spruce St	Roentgenology
Vastine Jacob H	1930 Chestnut St	Radium therapy
Widmann B P	250 S 18th St	Radiology
Willey, Louis R	1512 N 15th St	Roentgenology
Zulick, J Donald	2008 Walnut St	Roentgenology
<b>Phillipsburg</b>		
Benson, Andrew L		Roentgenology
<b>Pittsburgh</b>		
Alley, Reuben G	4800 Friendship Ave	Diagnostic roent.
Caldwell C S	520 S Alken Ave	Diagnostic roent
Fisher J W	500 Penn Ave	Radiology
Goldsmith, Maurice F	3459 Fifth Ave	Roentgenology *
Gorinkell Julius	3401 5th Ave	Roentgenology
Grier G W	500 Penn Ave	Radiology
Grimm Homer W	500 Penn Ave	Radiology
Johnston Z A	500 Penn Ave	Roentgenology
McAdams Edward C	110 S Highland Ave	Roentgenology
McCullough, John F	500 Penn Ave	Radiology
McCullough Thos L	500 Penn Ave	Roentgenology
Ray William B	110 E Stockton Ave	Roentgenology *
Robinson, Ralph V	500 Penn Ave	Radiology
Schlaefter Charles N	500 Penn Ave	Radiology
Schumacher F L	500 Penn Ave	Roentgenology
Sterrett William J	110 Stockton Ave	Roentgenology *
<b>Reading</b>		
Meter Edward G	230 N 5th St	Roentgenology *
Travis, Richard C	230 N 5th St	Roentgenology
<b>Rochester</b>		
McCaskey F H		Radium therapy
<b>Seranton</b>		
Jackson Byron H	327 N Washington Ave	Roentgenology
Milkman Louis A	327 N Washington Ave	Roentgenology
von Poswik Gisela	217 Jefferson Ave	Roentgenology
<b>Shippensburg</b>		
Stewart, Alexander		Roentgenology
<b>Tamaqua</b>		
Hinkel William H	243 E Broad St	Roentgenology
<b>Uniontown</b>		
Hess George H	104 Morgantown St.	Roentgenology
<b>Upper Darby</b>		
Clagett A H	Long Lane Ct Apt	Roentgenology
<b>West Chester</b>		
Pennell Howard Y	Chester County Hospital	Roentgenology
<b>Wilkes Barre</b>		
DesJardins A	N River and Auburn Sts	Roentgenology *
Rogers, Lewis L	38 N Franklin St.	Roentgenology
<b>Wilkinsburg</b>		
McGregor William J	901 Wood St.	Roentgenology
<b>Williamsport</b>		
Wurster, L E	416 Pine St.	Roentgenology
<b>York</b>		
Bennett John H	1253 W Market St	Radiology
Landes L S	454 W Market St	Diagnostic roent
Lutz J Fletcher	141 E Market St	Roentgenology

## RHODE ISLAND

<b>Newport</b>		
Wheatland Marcus F	84 John St	Diagnostic roent
<b>Pawtucket</b>		
Unger Oscar M	109 Broadway	Diagnostic roent.
<b>Providence</b>		
Albert Simon	108 Waterman St	Roentgenology *
Batchelder Phillip	188 Waterman St	Roentgenology
Benjamin Emanuel W	485 Broadway	Radiology
Boyd James F	105 Waterman St.	Radiology
Farrell, John T	335 Westminster St.	Diagnostic roent
Gerber Isaac	201 Waterman St.	Radiology
Kelley Jacob S	153 Smith St	Diagnostic roent
McNally D Raymond	513 Hope St	Roentgenology
<b>Woonsocket</b>		
Garrison Norman S	38 Hamlet Ave	Radiology

## SOUTH CAROLINA

<b>Anderson</b>		
Wrenn Frank	620 N Fant St	Radiology
<b>Charleston</b>		
Rudisill Hillyer Jr	Lucas and Calhoun Sts	Radiology
Taft Robert B	105 Rutledge Ave	Radiology
<b>Columbia</b>		
Pitts Thomas A	1515 Marion St	Radiology
Rodgers, Floyd D	1417 Hampton St	Radiology
<b>Florence</b>		
Hay Percy D Jr	111 W Cheves St	Radiology
<b>Greenville</b>		
Judy W S	107 E North St	Radiology
<b>Spartanburg</b>		
Sheridan William M	116 W Main St	Radiology

## SOUTH DAKOTA

<b>Aberdeen</b>		
McCarthy, Paul V		Roentgenology
<b>Pierre</b>		
McLaurin A A		Roentgenology *
<b>Sioux Falls</b>		
Nessa Nellus J	301 S Minnesota Ave	Roentgenology
<b>Watertown</b>		
Koren F	Broadway and Kemp Ave	Roentgenology *

## TENNESSEE

NAME	ADDRESS	TYPE OF SERVICE
<b>Chattanooga</b>		
Bogart F B	540 McCallie Ave	Roentgenology
Frere John Marsh	707 Walnut St	Roentgenology *
Marchbanks S S	546 McCallie Ave	Radiology
<b>Johnson City</b>		
Hankins John L	920 W Maple St	Roentgenology
<b>Knoxville</b>		
Abercrombie Eugene	803 W Main Ave	Roentgenology
Casenburg S F	601 Walnut St	Roentgenology
McCampbell H H	614 Walnut St	Radiology
<b>Memphis</b>		
Bethea W R	899 Madison Ave	Roentgenology *
Coley Steve W	1205 Union Ave	Roentgenology *
Heacock Charles H	20 S Dunlap St	Radiology
Herring J H	995 Madison Ave	Roentgenology
King J Cash	915 Madison Ave	Roentgenology
Lawrence W S	248 Madison Ave	Radiology
Paine Robert	248 Madison Ave	Radiology
Pulliam H N	617 S McLean Blvd	Roentgenology
Robinson W W	1291 Union Ave	Roentgenology
<b>Nashville</b>		
Dillard Charles F	1117 1st Ave S	Roentgenology
McClure C C	700 Church St	Radiology
Shoulders H S	706 Church St	Roentgenology

## TEXAS

<b>Amarillo</b>		
Van Sweringen Walter	301 Polk St	Roentgenology
Vaughan John H	724 Polk St	Radiology
<b>Beaumont</b>		
Barr Richard F	388 Pearl St	Radiology
Ledbetter L H	388 Pearl St	Radiology
White C M	595 Orleans St	Roentgenology
<b>Corsicana</b>		
Curtis Richard C	101 N Beaton St	Roentgenology
<b>Dallas</b>		
Beaver N B	1710 Pacific Ave	Radiology
Martin Charles I	4300 Junius St	Radiology
Martin J M	1719 Pacific Ave	Radiology
Spangler Davis	4105 Live Oak St	Radiology
<b>Eastland</b>		
Caton J H		Roentgenology
<b>El Paso</b>		
Cuthbert J W	114 Mills St	Radiology
Mason C H	114 Mills St	Radiology
York M V	303 Texas St	Roentgenology
<b>Fort Worth</b>		
Bond Tom B	600 W 10th St	Radiology
Hyde N H	600 W 10th St	Radiology
Jugoda S	1212 W Lancaster St	Radiology
O Bannon R P	1028 5th Ave	Radiology
<b>Houston</b>		
Durrance Fred Y	1211 Waller Ave	Roentgenology
Harris C P	1625 Main St	Roentgenology *
McLeod W C	1211 Walker Ave	Roentgenology *
McHenry R K	1211 Walker Ave	Roentgenology
Saueremann Wm O	804 Travis St	Roentgenology
<b>Lubbock</b>		
Smith Jerome H	1701 Broadway	Roentgenology
<b>Mineral Wells</b>		
Yeager Robt L		Radium therapy
<b>San Antonio</b>		
Barron Wm Marshall	705 E Houston St	Roentgenology *
Hamilton W S	705 E Houston St	Diagnostic roent
Lowry R H Jr	Station Hospital Fort Sam	
Ostendorf W A	507 1/2 E Houston St	Roentgenology
<b>Sherman</b>		
Henschen G I	500 N Highland Ave	Roentgenology *
<b>Temple</b>		
Cues Roy C	Scott and White Clinic	Roentgenology *
Lowell Eugene A	301 S 22d St	Radiology
Wilson R T	Scott and White Clinic	Roentgenology *
<b>Waco</b>		
Jenkins J Warner	425 Austin Ave	Radiology
<b>Wichita Falls</b>		
Wilcox Clark A	1700 5th St	Roentgenology *

## UTAH

<b>Ogden</b>		
Weeks Paul R	2110 Harrison St	Roentgenology
<b>Salt Lake City</b>		
Coray O B	9 E South Temple St	Roentgenology
Kelly James I	9 Exchange Pl	Roentgenology *

## VERMONT

<b>Burlington</b>		
Callahan Nathan I	Callahan Ave	Roentgenology *
Conner Carl E	103 Main St	Roentgenology *
Wilson S A	10 Bank St	Roentgenology *
<b>Rutland</b>		
Clark Benjamin I	46 Michel St	Diagnostic roent.

## VIRGINIA

<b>Lynchburg</b>		
Sauer Hattie B	Alfred Arts Bldg	Radiology
<b>Newport News</b>		
Leahy A	201 West Ave	Roentgenology
<b>Norfolk</b>		
Clark A	West End Ct	Roentgenology *

## NAME

## ADDRESS

## TYPE OF SERVICE

<b>Petersburg</b>		
Clarkson Wright	30 Franklin St.	Radiology
<b>Richmond</b>		
Flanagan E J	110 E Franklin St	Roentgenology
Hodges Fred M	1000 W Franklin St	Radiology
Snead Lawrence O	1000 W Franklin St	Radiology
Tabb J Lloyd	118 E Franklin St	Roentgenology *
Talley Daniel D Jr	501 E Franklin St	Roentgenology *
Whitehead L J	501 E Franklin St	Roentgenology *
<b>Roanoke</b>		
Armentrout John F	30 1/2 Franklin Rd	Radiology
McKinney Joseph T	30 1/2 Franklin Rd	Roentgenology *
<b>University</b>		
Archer Vincent W		Roentgenology *
<b>WASHINGTON</b>		
<b>Longview</b>		
Hayes Richard	Columbia Clinic	Roentgenology
<b>Seattle</b>		
Bourne Frank S	509 Olive St	Radiology
Dwyer Maurice F	1115 Terry Ave	Radiology
Garhart Manah N	1305 4th Ave	Radiology
Holtz Kenneth J	920 2d Ave	Roentgenology
Koenig Carl E	509 Olive St	Roentgenology
Nichols H E	1215 4th Ave	Roentgenology *
Snively J Howard	509 Olive St	Radiology
Stephens Lorenzo L	1215 4th Ave	Radiology
Thompson H B	1305 4th Ave	Roentgenology *
Thomson Curtis H	1305 4th Ave	Radiology
Ward Chas B	803 Summit Ave	Radiology
<b>Spokane</b>		
Aspray Jos	407 Riverside Ave	Radiology
Betts Arthur	407 Riverside Ave	Radiology
<b>Tacoma</b>		
Fishel C R	740 St Helens Ave	Roentgenology
Hart Alan L	315 S K St	Radiology
McCarty E D	740 St Helens Ave	Roentgenology
<b>Walla Walla</b>		
Johannesson C J	1 W Main St	Roentgenology
<b>Yakima</b>		
Cornett Geo W	321 E Yakima Ave	Roentgenology *
<b>WEST VIRGINIA</b>		
<b>Charleston</b>		
Jambert A C	240 Capitol St	Roentgenology
Lanman Everett L	Brooks St and Elmwood Ave	Roentgenology
<b>Fairmont</b>		
Francis Charles T	200 Gaston Ave	Roentgenology
<b>Hollidays Cove</b>		
Davis Geo H		Diagnostic roent
<b>Huntington</b>		
Mackenzie A R	955 4th Ave	Roentgenology *
Vinson L T	317 9th St	Roentgenology
<b>Parkersburg</b>		
Bolce Ralph Homer	717 Ann St	Roentgenology
Rose Lonzo O	510 1/2 Market St	Radiology
<b>Wheeling</b>		
Bippus F S	77 16th St	Roentgenology
Cloris C H	2000 East St	Radiology
Halslip Norvell L	2000 East St	Radiology
Kalbfleisch W K	58 16th St	Roentgenology
Quimby Will A	1401 Market St.	Radiology
<b>WISCONSIN</b>		
<b>Appleton</b>		
McCrath E F	114 W College Ave	Radiology
<b>Beloit</b>		
Wilson Russell F	431 Olympian Blvd.	Radiology
<b>Eau Claire</b>		
Balrd J C	401 S Barstow St	Roentgenology
<b>Green Bay</b>		
Olmsted Austin O	205 E Walnut St	Radiology
Shewalter C M	305 E Walnut St	Roentgenology
Troup R I	300 Cherry St	Roentgenology
<b>Janesville</b>		
Kucke F H	19 S Main St	Roentgenology
<b>Kenosha</b>		
Bowling Irwin F	625 57th St	Roentgenology
Sokow Theodore	7-3 58th St	Radiology
<b>LaCrosse</b>		
McLoone J E	319 Main St	Roentgenology
<b>Madison</b>		
Fillis Ivan C	720 S Brooks St	Roentgenology
Hittig Lawrence A	925 Mound St	Roentgenology
Pohle F A	1100 University Ave	Radiology
Sisk J Newton	16 S Henry St	Roentgenology
<b>Marshfield</b>		
Potter R P		Radium therapy
<b>Milwaukee</b>		
Altenhofen A R	152 W Wisconsin Ave	Roentgenology
Baumgarten S	105 E Wisconsin Ave	Roentgenology
Ferguson Paul S	324 E Wisconsin Ave	Roentgenology
Habbe John Edwin	211 W Wisconsin Ave	Roentgenology
Morton S A	3321 N Maryland Ave	Roentgenology
Poditzky Harry B	425 E Wisconsin Ave	Roentgenology
Zmyslowsky W I	931 W Mitchell St	Diagnostic roent
<b>Neenah</b>		
Greenwood S D		Radiology
<b>Salem</b>		
Hitcher Wm		Roentgenology
<b>Superior</b>		
Saunders Geo	1501 Tower Ave	Roentgenology
<b>Waukesha</b>		
Kutner Geo L	431 N Grand Ave.	Roentgenology



## NEW YORK

**Mr Bausch Honored**—Edward Bausch, president of the Bausch and Lomb Optical Company, Rochester, was the guest of honor at the annual dinner of the Society of the Genesee at the Hotel Commodore in New York, January 23. Mr Bausch, who is 79 years old, has spent his life in the business of designing microscopes and other optical instruments. The Society of the Genesee is an organization of men and women who have lived in the Genesee Valley of New York and who meet each year to honor a prominent neighbor and renew friendships. Among the speakers were Major Gen James G Harbord, New York, Arthur Louis Day, Sc D, of the Carnegie Institute, Washington, D C, Rush Rhees, D D, president, University of Rochester, Louis Wiley of the New York Times, and John D Rockefeller, Jr.

**Bills Introduced**—S 426 and A 638, to amend the pharmacy practice act, proposes (1) that a drug be deemed misbranded within the meaning of the act if the package in which it is contained does not state the percentage contained therein of barbituric acid and (2) that the manufacture and sale of proprietary medicines be exempt from the operation of the act if such medicines contain no poisonous, deleterious or habit-forming drugs. S 456, to amend the workmen's compensation act, proposes, in effect, to make compensable "any and all disabling diseases and disabling illnesses" contracted in the course of any employment covered by the act. A 395 proposes to repeal the law regulating the possession and distribution of narcotic drugs and to enact the Uniform Narcotic Drug Act. A 706 proposes that no hospital, supported wholly or in part at public expense, shall hereafter charge any fee or other compensation for medical services rendered while operating a clinic to which the public is invited.

## New York City

**Hospital News**—The New York Ophthalmic Hospital has recently merged with the New York Homeopathic Medical College and Flower Hospital. Under the new arrangement eye, ear, nose and throat patients of the hospital will be cared for by the ophthalmic hospital staff and a clinic for outpatient service will be maintained in a newly equipped building in the Flower Hospital group at 415 East Sixty-Third Street.

**Society News**—Dr Margaret S W Barnard, among others, addressed the Medical Association of the Greater City of New York, Dec 19, 1932, on "Paper Films in Chest Radiography". Dr George E Pfahler, Philadelphia, addressed the New York Roentgen Society, December 19, on "Mediastinal Tumors and Their Differentiation". Dr Sheldon A Jacobson, among others, addressed the New York Pathological Society, December 22, on "Myeloid Leukemia with Osteosclerosis". Dr William P Healy addressed the Medical Society of the County of Queens, Forest Hills, December 16, on "Carcinoma of the Female Organs". A society to be known as the Association of Private Hospitals of Greater New York was recently formed by representatives of seventeen hospitals, with Dr Harold M Hays as president and Dr George E Browning, Jr, secretary. Mr O R Gottfried is executive director of the organization, which has headquarters at 256 Fifth Avenue. Speakers at a meeting of the New York Neurological Society in conjunction with the section of neurology and psychiatry of the New York Academy of Medicine, January 10, were Drs James H Huddleson, Jr, on "Circulatory Disorders in Psychoneurotics in Terms of the Schneider Index", Howard W Potter, "A Clinical Concept of Mental Deficiency," and George K Pratt, "Mental Hygiene—A Developing Concept". Dr Isaac Starr, Jr, Philadelphia, among others, addressed the New York Physical Therapy Society, January 4, on "Use of Heat and Other Agents in the Local Treatment of Peripheral Vascular Disease". Dr Chevalier Jackson Philadelphia, addressed a meeting of physicians held under the auspices of the New York chapter of the Pan-American Medical Association, January 9, on "Postoperative Pulmonary Complications". Dr James Morley Hitzrot addressed the New York Surgical Society, January 11, on "Surgical Conditions of the Subdeltoid Bursa". The Maternity Center Association held its fifteenth annual meeting, January 18 with Dr George W Kosmak and Hon Alfred E Smith as the principal speakers.

## NORTH CAROLINA

**Bill Introduced**—S 134 proposes to authorize the superintendent of any public hospital, sanatorium or institution on the written request of a licensed physician and the spouse, guardian or next of kin of any drug addict, inebriate, or insane person to restrain such person in his institution for a period not exceeding twenty days.

## NORTH DAKOTA

**Bills Introduced**—S 129 proposes that all applicants for licenses to practice any form of the healing art, as a condition precedent to examination by their respective "professional" boards, pass examinations in anatomy, chemistry, physiology, pathology, bacteriology, diagnosis and hygiene, to be given by a board of examiners in the basic sciences. However, the board, in its discretion, may accept applicants as competent in any or all of the basic sciences, without examination, if those applicants "have successfully passed an examination in the particular basic science, in any college or university, recognized by the Association of American Universities". H 89 proposes to classify marihuana as a habit-forming drug within the meaning of the narcotic drug act. S 137 proposes to permit dentists, holding proper federal permits, to administer intoxicating liquors to patients.

## OHIO

**Bills Introduced**—H 60 proposes that the provisions of the medical practice act "shall not be construed to apply to persons who only practice religious tenets of their church as an exercise or enjoyment of religious freedom, if no material medicine, manipulation or material means are prescribed or used". H 80 proposes that the state reimburse hospitals for the care and treatment of indigent persons injured in automobile accidents.

**Personal**—Dr Aaron H Smith, Atlanta, Ga, has been appointed superintendent of Pleasant View Sanatorium, Amherst, to succeed the late Dr Herbert F Gammons. Dr Smith has been assistant superintendent of Battle Hill Sanatorium in Atlanta. Dr Arthur B Lathrop, Swanton, recently completed fifty years of medical practice. Dr John H Baird, clinical director of the Veterans' Administration Hospital at Chillicothe, has been transferred to the central office in Washington, D C, as associate in the neuropsychiatric division. Dr Charles A Bowers has been appointed director of surgery at St Luke's Hospital, Cleveland, to succeed Dr Carl H Lenhart, who was recently appointed professor of surgery at Western Reserve University School of Medicine.

## OKLAHOMA

**Bill Introduced**—S 162, to amend the workmen's compensation act, proposes to permit an injured employee to select his own physician, for whose services the employer shall be liable.

## OREGON

**Bills Introduced**—H 127 proposes that all applicants for licenses to practice medicine, osteopathy, chiropractic, naturopathy, or any other system of the healing art, as a condition precedent to examination by their respective "professional" boards, be examined in anatomy, physiology, pathology, chemistry and hygiene by a state board of higher education. H 244, to amend the workmen's compensation act, proposes that unless the employer has contracted for medical or hospital care for his employees, an injured employee may choose his own physician. H 257 proposes to authorize the governing body of any incorporated city to license, for the purpose of regulation and revenue, all such professions and other employments as the public good requires to be licensed and regulated. H 235, in effect, proposes to create a department of public health and sanitation, the director of which shall be a licensed physician. He shall act as secretary, treasurer and executive officer of the state boards of health, of eugenics, of medical examiners, of dental examiners, of naturopathic examiners, of chiropractic examiners, of chiropody examiners and of other vocational examining boards.

## PENNSYLVANIA

**Society News**—Dr Charles Falkowsky, Jr, Scranton, addressed the Schuylkill County Medical Society at Pottsville in December, on "Modern Medicine". Dr John Cooke Hirst II, Philadelphia, discussed modern methods in obstetrics before the Lehigh County Medical Society, Allentown, Dec 13, 1932. Dr John Lovett Morse, Boston, was the guest speaker before the Allegheny County Medical Society, Pittsburgh, January 17, on "The Value of Breast Milk and Infant Feeding". Dr Conrad Berens, New York, addressed the Luzerne County Medical Society, Wilkes-Barre, Dec 7, 1932, on "The Eye in the Diagnosis and Treatment of General Diseases". Dr Thomas Palmer Tredway, Erie, addressed the Erie County Medical Society, January 3, on cardiac arrhythmias.

**Bills Introduced**—S 270 proposes to accord to the state and to every charitable institution rendering hospital care to

a person injured through the fault of another, a lien for the amount of the hospital charges on all rights of action, suits, claims, or demands which may accrue to such injured person as the result of his injuries. This lien, however, may not exceed 50 per cent of the award, verdict, settlement, or compromise received by the injured person. S 257 proposes to make it the duty of state aided hospitals with available facilities, to treat every indigent sick veteran who is eligible for federal hospitalization and presents a certificate from a physician showing that the veteran has applied for federal hospitalization and that an emergency exists. The hospital must then care for the veteran until such time as a bed is available in a federal institution. The hospital is to be compensated as in the case of other indigent patients.

### Philadelphia

**Two Hospitals Drop Group Payment Plans**—Two Philadelphia hospitals have recently abandoned plans for hospitalization on a group payment basis as a result of protests by the Philadelphia County Medical Society. Hahnemann Hospital, which had enrolled 500 subscribers for a fee of \$10 a year, announced, January 13, that no more applications would be received. Its plan had been in operation since November. Germantown Hospital had under consideration a plan for hospitalization of the employees of a Philadelphia industrial firm at \$15 a year. It had been approved by the trustees of the hospital, but the final decision was left to the staff, which decided against adoption at a special meeting, January 16. The county society issued a statement the following day in which it declared its unalterable opposition to "any form of group or contract practice which militates against the conservation of public health or which tends to exploit and commercialize medical care at the expense of the public." The alternative to group or contract practice, the statement continued, is, as it has always been, the family physician. "Unwarranted propaganda against the efficiency of this form of private practice has unquestionably been put forth in an effort to commercialize medical care and has been taken advantage of by that class of people who are constantly trying to evade payment for any benefits received, the same class that moves from house to house and shops from store to store, always seeking something for nothing. The medical profession will continue to do its duty in protecting the public from such exploitation, even at the expense of being considered selfish by thoughtless people who have no direct knowledge of medical problems," the statement concluded.

### SOUTH DAKOTA

**Typhoid Epidemic at Chamberlain**—An epidemic of typhoid in which 230 cases occurred between December 29 and January 19 has been reported from Chamberlain, a town of about 1400 inhabitants. December 29, a case of typhoid was reported to the state board of health and the state sanitary engineer was asked to come to Chamberlain to investigate the city water supply. Investigation disclosed that insufficient chlorine was being used to purify the water, which is derived from the Missouri River. The state board of health set up a temporary laboratory for diagnostic tests and water analysis. By January 7 the number of cases had increased to 175. After investigation the Red Cross took over the nursing situation and an emergency hospital of forty six beds was set up in the basement of the city hall. Field nurses were also provided by the Red Cross for patients in their homes. Although the water supply was definitely incriminated as the source of the epidemic every possible source of infection was checked. Pasteurization of all milk sold in the city was ordered and sanitary crews were set to clean up rubbish in the town. The water plant was remodeled. Vaccination was begun on a large scale January 3 and within three days more than 2000 persons of the town and surrounding territory had received the first inoculation. Officials of the state board stated January 19 that the epidemic was believed to be under control, as fewer cases were being diagnosed daily. Complete cooperation on the part of physicians, business men and city, school and county officials was reported by the one in charge of the emergency. Newspapers reported January 20 that twenty persons had died in the epidemic.

### TEXAS

**Bill Introduced**—H 179 proposes to accord to hospitals or clinics rendering hospital services caring for persons injured through the fault or neglect of another, liens limited to \$5 for each day of treatment on any rights of action recoveries or otherwise accruing to the injured persons by reason of their

injuries. This lien, however, is not to attach to claims or recoveries had under the employers' liability act.

**Society News**—Dr Ollie S Hodges, Beaumont, was elected president of the Texas Ophthalmological and Otolaryngological Society at the annual meeting in Fort Worth, Dec 3, 1932. —Drs Joseph R Froese, San Antonio, and Ben R Eppright, Austin, addressed the Lee County Medical Society, Giddings, Dec. 6, 1932, on resection of the prostate and lesions of the mouth, respectively. —Drs Ben B Brandon, Edgewood, and Horace A Baker, Wills Point, addressed the Van Zandt County Medical Society, Canton, Dec 2, 1932, on fractures and on anesthesia in obstetrics, respectively. —The Texas Conference on Child Health and Protection was held in Austin, February 9-11. Chairmen of the sections are Dr John O McReynolds, Dallas, medical service, Warner E Gettys, Ph D, Austin, the handicapped child, Dr Herbert N Barnett, public health service and administration and Benjamin F Pittenger, Ph D, Austin, education and training.

### UTAH

**Bill Introduced**—H 17 proposes to accord to physicians, nurses and hospitals, caring for persons injured through the fault of another, liens or any claims or causes of action, which the injured persons may have against the persons causing the injury, or which the person causing the injury may have against any insurance or surety company, because of the injuries.

### WASHINGTON

**Bills Introduced**—H 158 proposes that an action based on malpractice shall be brought within two years after the occurrence of the cause of action. H 118, to amend the chiropody practice act, proposes to define chiropody as "the examination, diagnosis or treatment, medically, mechanically or surgically, of the ailments of the human foot, and massage in connection therewith, but shall not include the amputation of the toes or foot, nor operation requiring the use of anesthetics other than local." The bill also proposes that the act shall not prohibit regular commercial sales of foot appliances and remedies, or shoes in retail stores. S 95 proposes to repeal those sections of the workmen's compensation act authorizing employers to enter into contracts for the furnishing of medical and hospital services to such of their employees as may be injured in the course of their employment.

### WYOMING

**Bill Passed**—H 12, proposing to authorize the sexual sterilization of insane, idiotic, imbecile, feeble-minded or epileptic inmates of state institutions, has been passed by the house.

**Bills Introduced**—H 96 proposes that nothing in the pharmacy practice act is to prevent the sale by any retailer of any patent or proprietary medicines or poisons when sold in original sealed packages. H 91 proposes to authorize the state board of medical examiners to license persons to practice chiropody. Chiropody is defined as the examination, diagnosis or treatment medically, electrically, mechanically or surgically of the ailments of the human foot, except the amputation of the toes or foot, or the use of anesthetics other than local.

### GENERAL

**Medical Bills in Congress**—*Changes in Status* S J Res 243 has been favorably reported to the Senate, authorizing the President of the United States to extend a welcome to the Pan-American Medical Association, which will hold its Fourth Congress at Dallas, Texas, from March 21 to March 25. H R 7518 has been favorably reported to the Senate empowering the President, under such regulations as he may prescribe to authorize the board of health of the Canal Zone to issue licenses to practice the healing art, which regulations shall include the conditions under which such licenses shall be issued and shall provide for the revocation of licenses.

**Northwest Regional Conference**—The annual Northwest Regional Conference which is to be held in St Paul February 19 will be devoted to discussion of medical economics. Among the subjects on the program are care of the indigent, oversupply of physicians. The Milwaukee Plan, health insurance and corporation practice, financing of medical journals, various phases of legislation and relations of the American Medical Association to the state associations. Richard E Scanlon, Ph D, dean of the medical sciences University of Minnesota Medical School, Minneapolis, will lead a discussion

of the report of the Committee on the Costs of Medical Care. Others who will participate in the conference are Drs Naboth O Pearce, Minneapolis, Franklin S Crockett, West Lafayette, Ind., Reginald H Jackson, Madison, Wis., John R Neal, Springfield, Ill., Paul H Burton, Fargo, N D., and John R Westaby, Madison, S D., all presidents of their respective state societies. Among other speakers will be Dr William C Woodward, Chicago, director, Bureau of Legal Medicine and Legislation, American Medical Association, who will speak on health insurance and corporation practice. Dr John F D Cook, Langford, S D., is president of the conference and Dr Edward A Meyerding, St Paul, secretary.

**Mid-South Post Graduate Medical Assembly**—The forty-ninth annual session of the Mid-South Post Graduate Medical Assembly (formerly the Tri-States Medical Association of Mississippi, Arkansas and Tennessee) will be held in Memphis, Tenn., February 14-17. Among the speakers announced are the following physicians:

Joseph L. Baer, Chicago. Cervix Uteri in Obstetrics and Gynecology.  
John M. Wheeler, New York. Exophthalmos as a Diagnostic Sign.  
Russell L. Cecil, New York. Chronic Arthritis.  
Frank H. Lahey, Boston. Modern Conception of Thyroid Disease and Its Management.  
Gerald B. Webb, Colorado Springs, Colo. Principles of the Treatment of Pulmonary Tuberculosis.  
Clarence M. Grigsby, Dallas, Texas. Cardiac Pain. Its Clinical and Differential Diagnosis.  
Alexander Randall, Philadelphia. The Story of Renal Tuberculosis.  
Charles F. Craig, New Orleans. Diagnosis and Treatment of Masked and Latent Amebic Infection.  
Thomas R. Brown, Baltimore. Medical and Surgical Treatment of Disease of the Gallbladder.

The medical profession of Memphis will give a stag buffet supper in honor of the assembly at the Memphis Country Club Wednesday evening, February 15. The Southern Inter-Urban Gynecological and Obstetrical Society and the southern section of the American Laryngological, Rhinological and Otological Society will also meet in Memphis, February 13.

**Sectional Meetings of Otolaryngologists**—Four sections of the American Laryngological, Rhinological and Otological Society have recently held their midwinter meetings and the fifth, the southern section will meet, February 13, in Memphis, Tenn. At the meeting of the eastern section in Boston, January 6, the program included the following speakers:

Drs Harris P. Mosher and Delbert K. Judd, Boston, osteomyelitis of the frontal sinus.  
Dr George M. Coates, Philadelphia. Indications for radical sinus surgery.  
Dr Varaztad H. Kazanjian, Boston, treatment of nasal deformity.

The middle section met, January 9, in Cincinnati. Among the speakers were:

Dr Leopold B. Bernheimer, Chicago, color index of the nasal septum in connection with faulty metabolism.  
Dr Harris H. Vail, Cincinnati. Schwannoma of the larynx.  
Dr Albert C. Furstenberg, Ann Arbor, Mich., pathology of spread of osteomyelitis: its relation to brain abscess.

At the midwestern sectional meeting, held in Iowa City, Iowa, January 10, the program included:

Dr Gordon B. New, Rochester, Minn., osteitis deformans of bones of the face.  
Dr Lee Wallace Dean, St. Louis. Microscopic studies of nasal and ear discharges.  
Dr Sam E. Roberts, Kansas City, Mo. Lichen planus of the oral mucosa without skin manifestations.

The western section held its meeting in San Francisco, January 13-14. Among the speakers were:

Dr Ashley W. Morse, Butte, Mont., pansinusitis with food allergy and hysterical manifestations.  
Dr Frank B. Kistner, Portland, Ore., parathyroid tetany.  
Dr Edward C. Sewall, San Francisco, cytologic examination of the sinuses.

Among those who will give addresses at the southern session will be:

Dr Waitman F. Zinn, Baltimore. Laryngectomy.  
Dr Theron E. Fuller, Texarkana, Texas, blastomycosis of the larynx.

## CORRECTIONS

**Osseous Changes in Hyperparathyroidism**—In the article by Dr. Camp, entitled "Osseous Changes in Hyperparathyroidism," in THE JOURNAL, Dec 3, 1932, page 1914, the legend that appears under figure 2 should have been under figure 3, and vice versa.

**Duroziez's Sign**—In Blumgart and Ernest's article in THE JOURNAL, January 21, page 176, table 1, case A, E, the systolic blood pressure and the pulse rate are transposed and they should read: pulse rate per minute, 70, systolic arterial pressure in millimeters of mercury, 126.

## Government Services

### General Munson Retires

Brig Gen Edward L. Munson ended thirty-nine years of service in the Army Medical Corps, Dec 31, 1932, having reached the retirement age, December 27. For two years he has been assistant to the surgeon general. He was adviser to the Philippine government in hygiene and sanitation, 1922-1924. During the World War he was assistant to the surgeon general in charge of training medical department personnel, and was later chief of the morale branch of the General Staff. In 1923, General Munson was in charge of medical relief for the U S Relief Mission in the earthquake area of Japan. He has taught hygiene in the service schools and preventive medicine at George Washington University School of Medicine, Washington, D C. In addition, he has invented several articles of equipment now in use in the army and is the author of a number of books on medicomilitary subjects. He received the Distinguished Service Medal in 1919. Appointed to succeed him as assistant to the surgeon general is Brig Gen Albert E. Truby, commanding officer of the Army Medical Center. General Truby is a graduate of the University of Pennsylvania School of Medicine and entered the army shortly after his graduation just preceding the Spanish-American War. From 1916 to 1918 he was chief health officer of the Canal Zone and superintendent of Ancon Hospital, Panama. During the World War he was on duty in the surgeon general's office and later served in the air medical service and as superintendent of Letterman General Hospital, San Francisco.

### American Scientific Mission in Haiti

Capt William Chambers has been transferred from the division of planning, Bureau of Medicine and Surgery, U S Navy, Washington, D C., to duty as director of the American Scientific Mission, Port au Prince, Haiti, succeeding Capt Montgomery O. Stuart. Established late in 1930 as the result of an agreement between the United States government and Haiti, the mission was "to act as advisers to the Public Health Service of Haiti and control the sanitation in the cities of Port au Prince, including the suburb Petionville, and Cape Haitien, where other American troops (marines) continue to be stationed, pending other arrangements and until the conclusion of a protocol for their evacuation" (THE JOURNAL, Jan 9, 1932, p 153). It was in October, 1930, that Haiti assumed definitely the administration and control of its national public health service. The director and eight other naval medical officers of the Public Health Service of Haiti comprise the American Scientific Mission.

### Wellcome Medal and Prize Competition

The Association of Military Surgeons again offers the Henry S. Wellcome Medal and a cash prize of \$500 for the best paper on "Value of Studies in Health and Sanitation in War Planning" or "Military Medicine as a Specialty. How Can a Knowledge of it be Promoted in the Medical Profession in Civil Life and in the Reserves?" Each competitor must furnish five copies of his paper, which must be signed with a *nom de plume* or some distinctive device. The manuscript must be accompanied by a sealed envelop, however, containing the name and address of the writer. Papers must be in the hands of the secretary of the association, Army Medical Museum, Washington, D C., not later than Sept 1, 1933. The maximum length is fixed at 10,000 words and the minimum at 3,000.

### New Surgeon General of Navy Appointed

Capt Charles M. Oman has been appointed surgeon general of the U S Navy, succeeding Rear Admiral Charles E. Riggs, whose term expired January 19. Capt Oman, who is 54 years old, graduated from the University of Pennsylvania Medical School in 1901 and was commissioned assistant surgeon in the medical corps of the navy, Dec 18, 1901. He entered his present rank Dec 28, 1921. During the World War Captain Oman served at the naval hospital, New York, in command of the Hospital Ship *Comfort* and in command of navy base hospital number 1, Brest, France. He was in command of the naval dispensary, navy department, from October 1928 until September, 1931, when he was ordered to command of the naval hospital Annapolis. Rear Admiral Riggs was appointed surgeon general with ex-officio rank of rear admiral Jan 19, 1929. He has been transferred to special duty with the secretary of the navy.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Jan 14, 1933

#### The Eugenic Problem

In an address to the Eugenics Society, Mr C J Bond, a well known surgeon, said that while recent reports showed great improvement in the general health of the school population, they provided no proof that natural intelligence and the innate capacity of mind and body were similarly improving. In spite of all the expenditure of time, money and energy on education, national health work, and the relief of unemployment during recent years, today one in every ten of our people was too dull or sickly to earn a living unaided, one in 200 was or had been mentally afflicted, and one in 120 was feeble-minded. We had left heredity and eugenics out of our calculation and had been breeding from the less well endowed, the less fit and the less worthy stocks in our population. The tendency of the birth control movement had been to reduce the numbers of children born in the more educated, skilled and successful, rather than in the less fit groups. To that extent birth control had had a dysgenic effect on our population. Much of our social legislation was not founded on sound biologic principles. Helping the weak, necessary though it was, was done at the expense of normal citizens and was actually providing for handing on the burden of human inefficiency, defect and misery in an aggravated form to future generations. If the great advance in medical knowledge was to secure the best results for humanity as a whole, the medical horizon must be extended to include also the health and welfare of future generations. A great step would be gained if the nation realized and acted on the conviction that the future of Western civilization depended ultimately on the innate capacity and the mental and bodily qualities of our people. Innate capacity is a matter of human breeding. Before a proper biologic outlook on human life could come about, public opinion in regard to biology and genetics must undergo a change.

#### Pensions for Panel Physicians

The British Medical Association has inaugurated a scheme for panel physicians which provides not only a pension for the physician himself but also an assured income for his dependents in the event of his death before he attains a pensionable age. Moreover, the pension will become operative in the event of his becoming disabled permanently. The scheme is contributory on a unit system. One unit represents a pension of \$500 a year at the age of 65 or the physician may accept a lump sum of \$5,000 in place of the pension. The scheme will be carried out by three insurance companies selected to issue the policies. The contributions will be paid quarterly by means of a form of authority from the physician authorizing the insurance committee that pays him to deduct the necessary amount from his fees. On the death of a physician before the age of 65 \$250 a year will be payable to his dependents until the anniversary of the date of entry nearest the attainment of the age of 65 had he survived. In addition there will be refunded a lump sum representing the contributions paid toward his pension varying from 55 to 80 per cent according to the age of entry. These benefits are for a single unit but a physician may take more units up to a maximum of five. The cost of a unit varies according to the age of entry. At the age of 25 the annual payment per unit is \$90. After this the payment rises until it becomes \$500 at the entry age of 55. Another feature of the scheme is that any profits arising out of its administration will be devoted to medical charities. Physicians have preceded the inauguration of such a scheme in 1931.

#### Management of Outpatient Departments of London Hospitals

A committee of King Edward's Hospital Fund for London, appointed to inquire into the methods of the outpatient departments of the London hospitals and their effects on the suitability of patients and the time of waiting, has issued its report. The committee finds that many of the hospitals are using their outpatient departments more and more for cases which need consultative and specialist treatment, minor cases being either dealt with in the casualty departments or referred for treatment by general practitioners. But this can be done only if the patients can obtain this treatment at a cost within their means. The committee concludes that hospitals should be encouraged to develop the consultative side of their outpatient work and the reference of nonurgent cases, after their first attendance, to suitable agencies which provide general practitioner treatment. But this is subject to three provisos. 1 Patients who desire a second opinion but cannot pay the fees of a private consultant should have access to the hospitals, at least for one medical examination, without first having to obtain the consent of any private physician. 2 A sufficient number of cases of all kinds should be available at teaching hospitals for the purposes of medical education. 3 Reference of minor cases to other agencies should not be made a rigid rule but should be introduced only gradually and applied only with gradually increasing strictness, except possibly when, as in the case of insured persons, an alternative agency has already been established, which is available without further cost to the patient. This would facilitate the treatment of the more serious cases and prevent overlapping between the hospitals and other agencies. The committee deals at some length with the question of waiting, about which much complaint has been made. The crowd of outpatients is so large that many have to wait for hours. The suggestion has been made that different patients or groups of patients should be given separate appointments, as in private practice, instead of all coming at once. This is already done for old patients in many special departments. There are difficulties in extending the system to general patients, but the committee considers that the subject needs more study before these can be pronounced insuperable.

#### Fenders for Omnibuses

Three persons are killed every day in London by automobiles and a great many are injured. The street cars are fitted with fenders to prevent persons struck from being run over, but not so the thousands of omnibuses on London streets. Before the war the London General Omnibus Company appealed for suggestions for a lifeguard for omnibuses. Thousands of designs were submitted but none of them overcame the difficulty of the front wheels projecting ahead of the vehicle which necessitated fitting the fender so far forward that the length of the omnibus was increased beyond the regulation limit. A new double-deck omnibus has now been devised with the front wheels set back 6 feet. This has made it possible to fit for the first time a fender such as is used on street cars.

#### Reporting Road Accidents

A conference between the ministry of transport and various road users organizations has resulted in a new system of reporting road accidents. The object is to provide the government with fuller information in an effort to make the roads safer. It has been found impossible, owing to lack of data, to give any definite reason for the sudden increase in the number of automobile accidents. The police have been supplied with a new form for giving particulars of any accidents causing death or injury which will be filled at police stations from the reports of police on the scene of the accident. The details asked for include the time of accident, the state of the weather and road, the age and sex of the driver, the length of

his or her driving experience, and whether they used dummies on the headlights. The latter question has been raised frequently in the police court. After being filled in, the forms will be forwarded to the home office, where the data will be analyzed from month to month.

### C F Beadles Is Dead

Cecil Beadles, F.R.C.S., pathologic curator of the Royal College of Surgeons, has died at the age of 66. He was educated at University College, where he won the gold medal in histology in 1885. He attracted the notice of Mr Shattock, pathologic curator of the museum, who appointed him his assistant in the work of recataloguing the pathologic collection. The building up of the collection of works on general pathology occupied them thirteen years. The collections of special pathology were then taken in hand, and while this work was in progress Professor Shattock died and Mr Beadles was appointed his successor. The task was finished only last year. Sir Arthur Keith, the conservator of the museum, says of Beadles: "He proved to be a master of museum technique, having an unrivaled skill in preparing specimens so as to bring out the essential features of the disease." With Shattock "he completed for the first time a work not written in words but in illustrative specimens—a complete and systematic treatise on general pathology." But his "greatest service to medicine was the preparation of the Army Medical Collection, now housed in the Royal College of Surgeons, the most complete and most extensive representation of the wounds and diseases of the Great War. He has taken his place in the line of eminent men who have served in succession the great museum—Paget, Eve, Targett, Shattock, Doran.

### PARIS

(From Our Regular Correspondent)

Dec 28, 1932

#### The Examination for Hospital Internships

The competitive examination for admission to hospital internships, in Paris, often gives rise to disturbing incidents. The examination is made very difficult, and great precautions are taken to assure its being conducted impartially and justly. Nevertheless, nearly every year, there are candidates who seek to use fraudulent methods. During the examination this year, many of the written papers were found to have certain small signs on them. An inquiry was ordered by the director of the Assistance publique and all the readers of the papers were interrogated. Among these was a young woman, aged 26, recently married, who had already been accepted as an intern. No suspicion attached to her more than to the others, but the close questioning to which she was subjected affected her so deeply that, on returning home, she killed herself. The suicide caused considerable stir in the daily press. The superior council of the Assistance publique hesitates to declare the whole competitive examination null and void, as some demand, that would work hardship on the honest candidates. Discussions on the subject have appeared in the medical journals. There is talk even of abolishing the system of selecting interns by means of competitive examination and of allowing the hospital physicians to select those of their pupils whose professional qualifications and scientific training seem to them to justify their direct appointment to internships. But the body of former interns of the *hopital de Paris* is an exclusive organization that is proud of its title, and it will not readily acquiesce in a different mode of selection.

#### Increase in the Welfare Department Budget

The 1933 budget of the Assistance publique a Paris provides for a total appropriation of 658,662,517 francs or about \$26,000,000. The budget is made up of sums paid by patients of the revenues derived from a tax on theater tickets, and of

a subsidy granted by the city of Paris. The amount of this subsidy has been increasing every year. In 1925 it was 163,000,000 francs, in 1932 it had reached 345,000,000 francs (\$13,800,000), a 53 per cent increase. The number of hospital beds has increased from 35,500 to 41,700, which is, however, an increase of only 14 per cent. The daily cost per patient has greatly increased owing to the new laws, including the eight-hour day for nurses, the vacation periods of the hospital personnel and the introduction of the new social insurance system. The cost of this personnel has almost doubled. The daily cost per patient ranges now around 40 francs (\$1.60). The average duration of hospitalization in Paris is twenty-seven days, in London it is twenty-four days, in Brussels twenty-two days, and in New York fifteen days. If patients stay too long in the hospitals, it is not so much from their need of treatment. There is too long waiting to be operated on, because the operating rooms are inadequate, too long periods of observation, because of delays in having various tests made, and too much red tape in transferring a patient with a chronic disease to a rural hospital.

The director of the budget suggests that economies can be made by not admitting patients whose condition does not necessitate constant care. Persons to be operated on should not be admitted until the evening before the operation. Until then they should be cared for at home by the visiting nurses of the "Service social" and should be sent to a center for convalescents as soon as they can be transported. The hospital must not be allowed to become a hotel. The economic crisis has made it necessary to curtail certain ambitious projects, but by 1939, 4,000 new hospital beds will have been created, 500 of which will be for aged persons who are able to pay a small part of the cost of their hospitalization.

#### Fee Splitting

For many years there has been much discussion on the payment by a surgeon of a part of his fee to the family physician, a practice introduced, it is said, fifty years ago, by Pean, without thought of any wrong. He regarded the fee of the attending physician, which was uniform in all cases, as inadequate. Pean viewed it as a method of inducing the family physician not to postpone too long a necessary operation. Dichotomy, however, tends to deteriorate into a gratuity to the physician from the surgeon, who is inclined to increase his fees in consequence.

The Union des syndicats médicaux made an effort to solve the problem by recommending the rendering of a joint bill. This aroused the displeasure of many physicians and surgeons who abhor such practices. Well known physicians have delivered addresses before medical societies condemning dichotomy. Unfortunately, the public press announced these meetings. The announcement was aggravated by the publication of the names of physicians who agreed never to resort to dichotomy. This made the situation worse, for those whose names are not on this list feel that they have been slandered.

#### The Economic Crisis and Cancer of the Digestive Tract

Prof Victor Pauchet has called attention to an increase in cancer of the digestive tract coinciding with the economic crisis. He has a large practice in abdominal surgery, and he has recently reported to the Société de médecine de Paris that never before has he observed so many gastric cancers, nor more extensive and more grave cases, than during recent months. He does not share the opinion of Professor Forgue, who attributes to the intense emotions a predisposing role in the genesis of neoplasms, supporting that view with statistics published following the World War, but he assumes that the financial crisis has compelled many aged persons to neglect to consult their physician promptly in regard to symptoms unless these are alarming. Gastric cancer begins insidiously, and only



an early intervention can arrest its development. Such early intervention effects 30 per cent of definitive recoveries, that is to say, recoveries extending over several years. English statistics on cancer of the rectum (Lockhart-Mummery) record an immediate mortality of 4 per cent and 50 per cent of definitive recovery.

## BERLIN

(From Our Regular Correspondent)

Dec 27, 1932

### Overworking the School Children

In spite of many reforms in the public schools, hygienic principles have not been sufficiently applied to the problem of fatigue caused by intensive study or long hours. The burdening of school children is still a subject of much discussion. To be sure, the schools should not be made solely responsible, for personal and domestic conditions may be incriminated in part. However, the schools would aid in solving the question if they would base their pedagogic theories to a greater extent on physiologic considerations.

There are three factors that constantly cause complaint: home work, the long recitation periods and extracurricular activities. Frequently, the child is overtaxed beyond the point of recovery. The child's physiologic functions become impaired, and the true condition is not recognized. He is thought to have become indolent or indifferent. An overburdening of younger children may easily occur when spurred on unduly by the older members of the class. That is especially the case when children are suffering from some health disturbance that has no striking outward manifestations. Enlarged tonsils, eye defects and other abnormalities that might be easily remedied if recognized may pass unobserved. Loss of interest in studies and frequent headaches may appear, yet the child may dissipate his energies in trying to keep up with the class. If these manifestations are associated with puberty, the unfavorable effects are enhanced. Then, too, there are children with subnormal intelligence who become more quickly exhausted by their futile efforts. These factors become much worse if, because of overlarge classes, the individual does not receive sufficient attention.

To counteract the injuries to health resulting from overburdening, pediatricians have recommended to the school authorities the omission of all school work on certain afternoons, more frequent holidays, dispensing with assignments over the week end, restriction of home work, reduction in the number of separate subjects studied, diminution in the number of school hours and suggestions as to the maximum time to be spent on home work. Special attention should be given to the beginning classes to see that they are not overburdened. School work must not begin so early that time for sleep is shortened, and, if there is an afternoon session, it must be preceded by a really adequate rest period.

### Restriction of Number of Students Admitted to University Institutes

Frequent mention has been made in previous letters of the difficulties that the present economic situation has imposed on university instruction. There is no doubt that the large number of students seeking admission to universities is due in part to the fact that no employment beckons them elsewhere. By attending the university they postpone the day when they may be compelled to join the crowd of unemployed, although it is true that they gain some cultural values. How oppressive the overcrowding of the university has become may be seen from a recent decree of the Prussian ministry of public instruction, addressed to the faculties of the Prussian universities which permit as an experiment the restriction of the number of students admitted to the university institutes in the hope of preventing the overcrowding of the universities. The ministry places the training of students must be of a high standard. The federal finances do not permit

any extensive increase of facilities for instruction in keeping with the onrush of students. The ministry has granted permission, therefore, to the various clinics, institutes, and the like, to announce the maximum number of students that, in their opinion, can receive proper training and to reject the applications of students in excess of that number. In the dental institutes, such restrictions were introduced some time ago.

### Natural and Artificial Illumination

During a session of the Berlin Society for Public Health Culture, held in the Hygienic Institute of the University of Berlin, Prof. Dr. Schütz spoke on the essentials of natural and of artificial illumination. He discussed the essentials of artificial illumination that have been established by different peoples (Germans, Americans, British and Russians). These criteria are especially important in the schoolroom. The minimal technical requirements are 80 light units for close work such as drawing and 50 light units for coarse work. In certain countries the requirements differ from these values. In any event, demands of technic sometimes receive more consideration than the requirements of health. For natural illumination the values are different than for artificial illumination. These are not merely theoretical considerations, for these determinations are of great practical significance, since they involve the question of providing the most favorable working conditions under artificial and under natural illumination, in order that the eyes of school children may be conserved.

### Meeting of Health Section of the League of Nations

The health section of the League of Nations held recently in Berlin a conference to establish uniform methods for the determination of the state of nutrition of a given population. The representatives at the conference were for Belgium, Dr. Gilbert, as representative of the International Labor Bureau, for Denmark, Dr. Madsen, for Germany, Dr. Hamel, president of the federal bureau of health, together with Professors Martineck, von Bergmann, Atzler, Hermann Zondek, Dr. Bansi and Dr. Stephan, for France, Dr. Parisot, for Great Britain, Janet Campbell and Dr. Hurst, for the Netherlands, Professor Gorter, chairman, for Italy, Professors Gini and Baglioni, for Austria, Professor Nobel, for the United States, Dr. Merlín and Dr. Blackfan.

The conference established the details of social and medical research for the determination of undernutrition. The collection of statistical data will be accomplished by the health services of the various countries. The health section of the League of Nations will undertake the elaboration of the statistics in common with the International Labor Bureau.

### The Jubilee of Friedrich von Müller

Prof. Friedrich von Müller, the eminent clinician of Munich, celebrated, Dec. 30, 1932, the golden jubilee of his medical doctorate. This splendid orator and skilful organizer, who has now attained the age of 74, is still untiringly active and is regarded as one of the outstanding characters of the German intellectual world. His reputation as a physician and investigator, and his activity at the head of the Deutsche Akademie in Munich and in the Deutsche Forschungsgemeinschaft have made him a preeminent authority. When the question is raised as to who would be a worthy representative of German science, the name of Friedrich von Müller is often the first one mentioned. Whenever he speaks his words receive careful attention. His presidential addresses and his accounts of foreign travels awaken deep interest owing to their high intellectual content and the keen insight into cultural demands. During the past thirty years, he has been the director of the second Medizinische Universitätsklinik in Munich and the city of Munich has rewarded him for his eminent service by conferring on him the title of honorary citizen.



### The German Red Cross

In the annual report of the German Red Cross Society for the year ended March 31, 1932, may be found the following data. In the hospitals there are about 7,000 nurses, 1,100 of these being in Red Cross institutions, 4,900 in communal institutions, 706 in university clinics and infirmaries, 211 in hospitals of brotherhoods, 86 in private clinics, 197 in maternity and after-care homes, 243 in homes for infants, and 569 in public welfare institutions. The total number of Red Cross nurses is 9,794, who are attached to fifty-seven chapters. The three-year training period (one year more than the government requires) is regarded as much needed and has been introduced by all the chapter houses. In addition to the continuation courses given in the chapter houses, the Red Cross Werner School in Berlin has become an active and important training center. During the year there has been a pronounced increase in the sanitary crews, the nursing bodies and the Good Samaritan clubs of the Red Cross, which number 3,358, as compared with 3,156 last year, with a membership of about 132,000, as against 122,000 last year, and with an auxiliary membership of 136,000. There are 6,435 municipal emergency crews, first-aid stations, and the like, and 23,505 stations for the reporting of accidents, and depositories of equipment for the transportation of the sick and injured. The service includes 565 motor ambulances for patients and 203 horse-drawn ambulances. In addition, there are more than 28,000 centers with equipment for the transportation of patients. These organizations supplied first aid to 2,300,000 persons in Germany, during the year covered by the report. In considering this total, it should, however, be borne in mind that only a portion of the hospital work and the nursing work is done by the Red Cross. There are now in Germany numerous other organizations that train nurses and practical nurses, some of which are under the auspices of religious societies, while others have been established either by the central government or by other political subdivisions.

### THE NETHERLANDS

*(From Our Regular Correspondent)*

Dec 3, 1932

#### International Conference on Tuberculosis

The eighth conference of the Union internationale contre la tuberculose, held at The Hague and at Amsterdam, Sept. 6-9, 1932, was attended by 750 members representing thirty-three nations. At the opening session, at The Hague, in the Hall of the Knights, in the presence of the queen mother and the prince consort, Professor Nolen, president of the conference, and Mr. Ruys de Beerenbrouck, minister of the interior, welcomed the members on the occasions of the tricentennial of Leeuwenhoeck and the fiftieth anniversary of Robert Koch. The general assembly of the members of the "union" decided to hold the ninth International Conference on Tuberculosis at Warsaw in 1934.

#### RELATIONS BETWEEN ALLERGY AND IMMUNITY

Mr. Jules Bordet confined his discussion to observations of an experimental nature. One understands by "allergy" a modified reaction of the organism, manifested by a hypersensitivity to a given substance after the primary infection, whereas by "immunity" one understands an insusceptibility to the disease. The speaker surveyed the great problem of allergy and immunity, concluding that, in the present state of knowledge, allergy appears to be a useful factor whose exact value cannot as yet be measured. Allergy does not constitute immunity, but it is an aid.

Immunity to tuberculosis is different from immunity to other diseases. It is possible that there is no such thing as immunity to tuberculosis. When it becomes possible better to understand the symptoms of modified cellular reactions that are

produced by the chemical elements of bacilli that have developed in a constant milieu, there will be an opportunity to enlarge the conceptions of immunity and possibly also of recovery.

#### POSTSANATORIAL AID

Mr. B. H. Vos presented an interesting paper on the subject of postsanatorial aid. The patients who now request postsanatorial aid are a different type from those of 1922, and the change is due to modern methods of treatment by collapse therapy. These methods have made it simpler for sanatorium patients to recover their working capacity, which usually becomes much impaired by a long stay in a sanatorium. The treatment of cavities by collapse therapy requires a long time, but usually not more than from 15 to 20 per cent of patients need aid after leaving the sanatorium. Occupational therapy, which is closely associated with postsanatorial aid, has been employed in the Netherlands since 1905. Postsanatorial aid consists of work to be performed under special protection. If this aid is likely to be required permanently, it appears practical for the authorities to grant a fixed sick benefit either to the institution that has charge of the patient or to the patient himself, if he has a family dependent on him. The help of the dispensaries in supplying this aid is a necessity.

Postsanatorial aid may be given either in work colonies or in workshops connected with sanatoriums. In the Netherlands, workshops attached to sanatoriums have been organized, an arrangement that appears good, although it can hardly be regarded as final. The supervision of a work colony should be in the hands of a physician who has specialized in tuberculosis. In the choice of occupation the phthisiologist needs to consult also the industrial leader.

Mr. Pattison (United States) emphasized the differences between the American view of the problem and that of the Netherlands. Thomas Te Nuyt considered that the economic question is the most important. Placement bureaus procure for the patients suitable work. In the Netherlands there is a tendency to believe that placement bureaus should be centralized and should deal not merely with the tuberculous but also with other persons whose working capacity has become reduced by disease.

### PRAGUE

*(From Our Regular Correspondent)*

Dec 27, 1932

#### Legal Control of Venereal Disease

The Czechoslovakian law against venereal diseases has now been in existence for ten years. It was one of the first sanitary measures put into effect in the new republic after the World War. The law introduced compulsory treatment of venereal diseases with free treatment for those who cannot afford a private physician. Besides, the law made it a duty of the physician to notify the health authorities of a patient with venereal disease who has interrupted his treatment before being cured. A measure that was novel in central Europe was the abolition of police measures against prostitution. After ten years of the law, there is no chance of reverting to old conditions. It must be stated that the control of private patients suffering from venereal diseases is inadequate in spite of the law because most private physicians do not report patients when treatment is interrupted because of fear of losing the confidence of the public. Nevertheless, this measure was quite useful. The public institutions adhere strictly to the provisions of the law. This applies to outpatient departments of hospitals, and especially to sickness insurance clinics. Follow-up bureaus have been established which supervise the treatment of those who have ever appeared on the list of venereal patients up to the time when they are declared cured by the physician. The same thing applies to the army. Favorable results are also reported with regard to the law which deals with the

sources of infection. The physician is required to question his patients and to notify the health authorities when there is an untreated source of infection. The provisions regarding prostitution have been the chief point of controversy in discussions that have taken place since the introduction of the law. The police resented the abolition of their power. The dissolution of brothels was also carried out with reluctance in some parts of the country. In spite of that, the health authorities are developing a technic which is purely medical and which takes over the public health control of those who indulge. Nevertheless, prostitution in large cities has assumed another form against which the health authorities are powerless at present. The practice of massage is not regulated under the laws and no one has the legal right to enter premises where massage is practiced and exercise any control. Prostitutes find there a refuge, and the former clientele of brothels was carried over into these establishments. As this situation became a menace to public health, a law regulating the practice of massage is being prepared. If it is enacted, massage can be practiced only by a licensed person under the strict control of health authorities. On the whole, the law regarding venereal diseases has gained so much ground in Czechoslovakia that it is considered an important part of the public health machinery. Its position was enormously strengthened also when four years later a law was adopted in Germany similar to that in Czechoslovakia.

#### Dentistry in Czechoslovakia

The practice of dentistry is again under discussion. According to the present laws, dentistry may be practiced by any registered physician. Only when he wants to use the title of specialist in dentistry does he have to have special qualifications, granted after one year's postgraduate training in the State Institute for Dentistry. According to the law of 1920, which regulates the practice of dentistry, nonmedical dentists are admitted to practice only when they were licensed before 1922. Although their functions have been limited by the law (surgical procedures of any kind are prohibited to them), they may nevertheless have their own surgery. The nonmedical dentists are not graduates of any school and have acquired their craftsmanship as apprentices. The intention of the law was to place the practice of dentistry in the hands of medical dentists and let die out those who do not possess this qualification. In spite of the law, apprentices have been taken into the services of nonmedical dentists. Consequently, pressure was brought on political parties by those concerned to modify the law of 1920 to admit to the practice of dentistry those who have learned dentistry through apprenticeships. The medical profession opposes this measure, pointing out that operations of any sort including the extraction of teeth, should not be performed by nonmedical dentists. A weakness of the defense is that some physicians often allow nonmedical dentists to perform operations on their patients that are against the law. It is evident that there are two solutions to the problem. Either dental work should be entrusted to physicians alone or special schools for nonmedical dentists should be formed where they would acquire the necessary qualification. It is doubtful whether this solution can be put through against the opposition of the medical profession of the country.

#### Sickness Insurance Has Financial Difficulties

The economic situation of the country begins to reflect itself in medical practice, especially among medical practitioners working under the insurance system. The sickness insurance bodies find themselves in a very unfavorable financial situation. During the last two years they have been working with a constant deficit and using their reserve accumulated in years of prosperity. There are several reasons for this unfavorable condition. One of the reasons is that the invalid and old age pensions which were introduced in 1924 did not establish its

own agencies and is using the local sickness insurance bodies for the collection of the fees. This is a burden on the sickness insurance bodies, although they are reimbursed from the Central Invalidity and Old Age Insurance Fund. The sickness insurance bodies claim that the reimbursement is far insufficient and that they have to pay most of the expenses from their own funds, another reason is that there has taken place a general reduction of wages, as the result of which the sickness insurance fees have also been cut. Unemployment is exercising strong pressure on health insurance. Many of those who had some chronic disease continued to work in times of prosperity but lost their job under the present circumstances when work is scarce. Naturally they turned to sickness insurance with their chronic disease. Recently the sickness insurance bodies addressed to the medical organization an appeal in which they ask the physicians to assent to a partial reduction of their remuneration owing to the difficult situation of the insurance bodies. The physicians maintain that they have already had their incomes cut by the fact that a great many insured patients were lost to them through widespread unemployment. Furthermore, most of the unemployed turn to the medical practitioners in case of sickness and they have to treat them free of charge if they want to preserve their reputation. The insurance administration is working on a reform of the present law to secure certain economies in the insurance scheme by reducing radically the sickness insurance cash benefit and transmitting the burden of chronic cases to the invalidity insurance, which is in a better financial situation than the sickness insurance.

#### Death of Milan Janu

The medical profession has suffered a serious loss in the sudden death of Dr. Milan Janu at the age of 47. Janu was the head of an important gynecologic department of one of the largest hospitals in Prague. Lately he became also lecturer of gynecology at the Czech medical faculty of Prague. His main achievement was in the field of professional organization. When at the close of the war in 1919 there appeared a strong opposition from young physicians to the official medical organization, Janu, who was put at the head of it, succeeded in making this movement constructive. He organized the Young Generation of Czechoslovakian Physicians and gave this body a definite and well rounded program of activities. He conceived it as a movement for the adaptation of medical practice to new forms of social life. He founded a periodical, the *Medical Practitioner*, which became the most widely read medical journal among practitioners in Czechoslovakia. He was responsible also for the interest which the Young Generation of Czechoslovakian Physicians has taken in the development of social medicine. He emphasized that it is a duty of the practitioner to cooperate with public health authorities in the work of public health clinics. He was a past-president of the Prague Rotary Club and he considered it his special task to be of assistance to American physicians coming to Czechoslovakia. His sudden death at the age of 47 will be a sad surprise to his many friends even outside of Czechoslovakia.

#### Marriages

WILLIAM J. FEEHAN, Kansas City, Kan., to Miss Antoinette Brazill in Tulsa, Okla., Dec. 26, 1932.

WILLIAM ARTHUR SHUCK, Indianapolis, to Miss Elizabeth Hueb of Monticello Ind., Dec. 24, 1932.

THOMAS A. DAVIS, Portland, Ore., to Miss Frances Kennedy of Long View, Wash., January 12.

LOYD S. NEASE, Newport, Tenn., to Miss Mary Will Ault of Knoxville, Dec. 24, 1932.

ALEXANDER A. LEVI to Miss Dorothy Helen Hite both of Boston, Oct. 12, 1932.

## Deaths

**Lloyd Earl Tefft** ♂ Major, U S Army, retired, Bradford, Pa., University of Michigan Medical School, Ann Arbor, 1911, was appointed first lieutenant in the medical reserve corps in 1914 and vacated in 1915, appointed first lieutenant in the medical corps of the regular army in 1915, was promoted to major in 1917 and retired for disability in line of duty in 1928, aged 42, died, January 9, of pulmonary tuberculosis and erysipelas.

**Robert Hawthorne Wylie** ♂ New York, University of the City of New York Medical Department, 1885, emeritus professor of gynecology, New York Polyclinic Medical School and Hospital, formerly on the staffs of the Bellevue Hospital, New York Polyclinic Hospital, St Elizabeth's Hospital, Woman's Hospital, New York, and the Hackensack (N J) Hospital, aged 69, died, January 13, of influenza.

**George Keesee Vanderslice**, Hampton, Va., University of Virginia Department of Medicine, Charlottesville, 1892, member of the Medical Society of Virginia, past president and secretary of the Elizabeth City County Medical Society, fellow of the American College of Surgeons, for many years county coroner, surgeon to the Dixie Hospital, aged 62, died, Dec 19, 1932, of pneumonia.

**Charles Buckley Maits** ♂ Pittsburgh, University of Pennsylvania School of Medicine, Philadelphia, 1910, instructor in medicine, University of Pittsburgh School of Medicine, director of the department of public health of Pittsburgh, served during the World War, on the staff of St. Francis Hospital, aged 48, died, January 1, of hypostatic pneumonia.

**Daniel Edward Berney** ♂ Scranton, Pa., Jefferson Medical College of Philadelphia, 1911, past president of the Lackawanna County Medical Society, served during the World War, chief of staff, St Joseph's Children's and Maternity Hospital, attending pediatricist to the Scranton State and Mercy hospitals, aged 45, died, January 11, of cerebral hemorrhage.

**William Joseph Walsh**, New York, Fordham University School of Medicine, New York, 1917, member of the Medical Society of the State of New York, honorary police surgeon and physician to the New York Giants baseball team, aged 41, died, Dec 15, 1932, in the Lutheran Hospital, of wounds received when he was shot by an ex-convict.

**Frederick Augustus Morrell** ♂ Putnam, Conn., Long Island College Hospital, Brooklyn, 1885, past president and secretary of the Windham County Medical Society, for many years member of the school board, on the staff of the Day Kimball Hospital, aged 75, died, Dec 27, 1932, at the Hartford (Conn.) Retreat, of pneumonia.

**Harvey Worth Sigmond** ♂ Crawfordsville, Ind., Hospital College of Medicine, Louisville, Ky., 1898, member of the Radiological Society of North America, served during the World War, aged 61, on the staff of the Culver Hospital, where he died, January 3, as the result of an automobile accident.

**William A. Mudd**, Detroit, University of Louisville (Ky.) School of Medicine, 1870, member of the Illinois State Medical Society, past president and secretary of the Menard County (Ill.) Medical Society, formerly mayor of Athens, Ill., aged 85, died, Dec 28, 1932, of chronic myocarditis and arteriosclerosis.

**Joseph Decatur Rogers** ♂ Washington, D C., Columbian University Medical Department, Washington, 1902, member of the Medical Society of Virginia, coroner, medical superintendent of the Eastern Dispensary and Casualty Hospital, aged 52, died, January 12, of atrophic biliary cirrhosis.

**James Enoch Silliman**, Erie, Pa., Jefferson Medical College of Philadelphia, 1874, member of the Medical Society of the State of Pennsylvania, formerly county coroner, aged 88, on the staff of St Vincent's Hospital, where he died, January 4, of cerebral hemorrhage and mitral stenosis.

**LaFayette Isley**, Excelsior Springs, Mo., Eclectic Medical University, Kansas City, 1901, Kansas City College of Medicine and Surgery, 1916, member of the Missouri State Medical Society, health officer of Excelsior Springs, aged 68, died, Nov 18, 1932, of pulmonary tuberculosis.

**Frank Edward Culp** ♂ Wenatchee, Wash., College of Physicians and Surgeons, Chicago, 1896, for many years health officer of Wenatchee, on the staffs of the Central Washington Deaconess Hospital and St Anthony's Hospital, aged 58, died, Dec 6, 1932, of uremia.

**De Laskie Smith**, Lebanon, Ind., Medical College of Indiana, Indianapolis, 1901, past president of the Boone County

Medical Society, formerly county coroner, city health officer and member of the city council, aged 59, died, January 5, of injuries received in a fall.

**James D Windell**, Spokane, Wash., Trinity Medical College, Toronto, Ont., Canada, 1894, member of the Washington State Medical Association, aged 70, died, Dec 20, 1932, in the Sacred Heart Hospital, of cerebral hemorrhage and coronary sclerosis.

**William H Owens**, Milwaukee, Milwaukee Medical College, 1908, member of the State Medical Society of Wisconsin, on the staffs of St Joseph's Hospital and St Mary's Hospital, aged 48, died, Dec 26, 1932, of cerebral embolism and chronic duodenal ulcer.

**John Hodgson McCullough, Jr**, Trenton, N J., Hahnemann Medical College and Hospital of Philadelphia, 1928, on the staff of the William McKinley Memorial Hospital, aged 28, was found dead, January 9, of illuminating gas poisoning.

**Caesar Deutsch**, New York, Ekaterinoslav Medical Institute, Dnipropetrovsk (Ekaterinoslav), Ukraine, Russia, 1895, Eclectic Medical College of the City of New York, 1903, aged 61, died, January 12, in the People's Hospital, of heart disease.

**Wallace Wadsworth Dyson** ♂ Portland, Maine, Medical School of Maine, Portland, 1900, on the staffs of the Maine General Hospital, Portland, and the Webber Hospital, Biddeford, aged 61, died suddenly, January 12, of heart disease.

**Francis Marion Thornhill** ♂ Arcadia, La., Medical Department of the University of Louisiana, New Orleans, 1872, past president of the Louisiana State Board of Medical Examiners, aged 83, died, Dec 5, 1932, of arteriosclerosis.

**Thomas Spencer Owen**, Elwood, Ind., Columbus (Ohio) Medical College, 1892, member of the Indiana State Medical Association, aged 63, died, Dec 30, 1932, in the Methodist Episcopal Hospital, Indianapolis, of pneumonia and uremia.

**Samuel Herbert Calderwood** ♂ Boston, Boston University School of Medicine, 1875, formerly secretary of the Massachusetts Board of Registration in Medicine, aged 80, died, January 13, of coronary thrombosis and arteriosclerosis.

**Edward William Meis** ♂ Sioux City, Iowa, State University of Iowa College of Medicine, Iowa City, 1900, fellow of the American College of Physicians, aged 55, died, Dec. 7, 1932, in a local hospital, of carcinoma of the stomach.

**Oran Purdy Andrews**, East Liverpool, Ohio, College of Physicians and Surgeons in the City of New York, Medical Department of Columbia University, 1893, served during the World War, aged 62, died, January 6, of pneumonia.

**Samuel Garrett Cardon**, Center, Ala., Medical Department of the University of Alabama, Mobile, 1902, member of the Medical Association of the State of Alabama, aged 54, was killed, January 6, in an automobile accident.

**Clifford R Sperow**, Martinsburg, W Va., University of Virginia Department of Medicine, Charlottesville, 1898, member of the West Virginia State Medical Association, aged 57, died, Dec 9, 1932, of chronic myocarditis.

**Richard Henry Sweetman**, Sauk Center, Minn., College of Physicians and Surgeons, Chicago, 1896, an affiliate fellow of the American Medical Association, aged 66, died, January 14, of heart disease and pneumonia.

**Oscar James Gilchrist**, Rutland, Vt., Long Island College Hospital, Brooklyn, 1874, member of the Vermont State Medical Society, aged 83, died, January 2, of hypertensive heart disease and arteriosclerosis.

**John F Fair**, Freeport, Ill., Medical Department of the University of the City of New York, 1881, Jefferson Medical College of Philadelphia, 1885, aged 77, died, January 2, in St Francis Hospital, of uremia.

**Charles A Stevens** ♂ Chicago, Northwestern University Medical School, Chicago, 1899, served during the World War, on the staff of the Evangelical Hospital, aged 61, died, January 3, of cerebral hemorrhage.

**Robert Ernest Sumner**, Rock Hill, S C., University of Pennsylvania School of Medicine, Philadelphia, 1910, member of the South Carolina Medical Association, aged 48, died, January 19, of pneumonia.

**Maurice William Aton**, Chicago, Ill., Loyola University School of Medicine, Chicago, 1917, member of the Illinois State Medical Society, aged 46, died, January 7, in Dayton, Pa., of angina pectoris.

**Daniel Maria Guiteras** ♂ Surg Lieut, U S Navy, retired, Denver, University of Pennsylvania School of Medicine, Philadelphia, 1874, entered the navy in 1879, aged 79, died, January 2, in San Diego.

**George Hills Francis**, Brookline, Mass., Harvard University Medical School, Boston, 1887, member of the Massachusetts Medical Society, aged 72, died, January 1, of heart disease and cerebral embolus

**Espy Eugene Little**, Statesville, N. C., North Carolina Medical College, Charlotte, 1912, aged 45, died, January 11, in the University Hospital, Philadelphia, following an operation for brain tumor

**David Austin Fox, Jr.**, Clinton, Conn., University and Bellevue Hospital Medical College, New York, 1902, member of the Connecticut State Medical Society, aged 55, died, January 3, of carcinoma

**William Alexander Daugherty**, Massillon, Ohio, Kentucky School of Medicine, Louisville, 1904, member of the Ohio State Medical Association, aged 73, died, January 5, of lobar pneumonia

**Warren Levi Diller**, Nicholson, Pa., University of Vermont College of Medicine, Burlington, 1909, served during the World War, aged 56, died, January 3, of myocarditis and diabetes mellitus

**B. Frank Walters**, Durango, Colo., Medico-Chirurgical College of Philadelphia, 1898, aged 61, died, January 19, in the Mercy Hospital, Denver, following an operation for tumor of spinal cord

**Frank William Arnold**, Milwaukee, Milwaukee Medical College, 1902, member of the State Medical Society of Wisconsin, aged 59, died, January 12, in St. Luke's Hospital, of pneumonia

**J. Hamilton Gray**, Morrison, Ill., Hahnemann Medical College and Hospital, Chicago, 1883, formerly member of the state legislature, aged 75, died, January 12, of pneumonia and influenza

**Morris Campbell Tarr**, Wellsville, Ohio, University of the City of New York Medical Department, 1881, health officer of Wellsville, aged 79, died, Dec. 10, 1932, of organic heart disease

**Abb Chauncey De Long**, San Angelo, Texas (licensed, Texas, under the Act of 1907), member of the State Medical Association of Texas, aged 73, died, Oct. 30, 1932, of heart disease

**John J. Leahy**, Lemont, Ill., Rush Medical College, Chicago, 1885, for many years township and village health officer, president of the board of education, aged 69, died, January 24

**Edwin Devereux Jaques**, South Berwick, Maine, Medical School of Maine, Portland, 1868, member of the Maine Medical Association, aged 91, died, Dec. 16, 1932, of arteriosclerosis

**Augustus W. Mercer**, Chicago, Western Reserve University Medical Department, Cleveland, 1901, aged 65, died, January 1, of coronary sclerosis and chronic myocarditis

**Joseph P. Ghio**, St. Louis, Marion-Sims College of Medicine, St. Louis, 1897, veteran of the Spanish-American War, aged 58, was found dead, January 10, of heart disease

**Joe Brown Rolater**, Oklahoma City, Okla., Vanderbilt University School of Medicine, Nashville, Tenn., 1884, aged 71, died, Dec. 18, 1932, at his home in Cave Spring, Ga.

**Gerhardt Herman Rathel**, Washington, Mo., Missouri Medical College, St. Louis, 1898, served during the World War, aged 61, died, Dec. 25, 1932, of heart disease

**Irvin W. Trees**, Greenfield, Ind., Medical Department of Butler University, Indianapolis, 1880, aged 81, died, Dec. 30, 1932, in the Robert W. Long Hospital, Indianapolis

**Charles Frederick Crittenden**, Alameda, Calif., Hahnemann Medical College of the Pacific, San Francisco, 1902, aged 53, died Nov. 15, 1932, of coronary occlusion

**Ernest Mason Vaughan, Jr.**, Providence, R. I., Hahnemann Medical College and Hospital of Philadelphia, 1930, aged 26, died, Oct. 15, 1932, of pulmonary tuberculosis

**Charles R. Andrews**, Atlanta, Ga., Atlanta College of Physicians and Surgeons, 1903, aged 53, died, Dec. 24, 1932, of an infected wound of the arm, self-inflicted

**Leonardo S. Clark**, Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1867, aged 85, died, Dec. 29, 1932, in the Presbyterian Hospital

**William Stager Helman**, Avoca, Pa., University of Pennsylvania School of Medicine, Philadelphia, 1903, aged 55, died Dec. 24, 1932, of coronary thrombosis

**Henry A. Fitch**, Utica, N. Y., University of Michigan Medical School, Ann Arbor, 1878, aged 84, died, January 3, of heart disease and diabetes mellitus

**John B. McBride**, Zanesville, Ohio, Cleveland University of Medicine and Surgery, 1896, aged 65, died, January 3, of bronchopneumonia and chronic bronchitis

**James Weir Craig**, Loveland, Colo., Denver College of Physicians and Surgeons, 1906, aged 52, died, in December, 1932, of acute hemorrhagic pancreatitis

**James Douglas Dinsmore**, Port Clyde, N. S., Canada, Halifax Medical College, Halifax, N. S., 1877, aged 88, died, Nov. 27, 1932, at Manchester, N. H.

**Robert Taylor Franklin**, Glendale, Ariz., University of Tennessee College of Medicine, Memphis, 1919, aged 36, died suddenly, January 1, of heart disease

**Erle Byron Crosby**, Valley City, N. D., Medical Department of Hamline University, Minneapolis, 1907, aged 51, died, January 4, of asthma and pneumonia

**Ferdinand G. Mohlau**, Buffalo, University of Buffalo School of Medicine, 1892, aged 66, died, Dec. 27, 1932, of myocarditis and aortic insufficiency

**George W. Norman**, Jamestown, N. C., Baltimore Medical College, 1896, aged 60, died, January 7, in a hospital at High Point, of pneumonia and influenza

**Edgar Collins**, Birmingham, Ala., Birmingham Medical College, 1906, aged 48, died, Dec. 30, 1932, in the Highland Baptist Hospital, of acute nephritis

**Charles Brigham Chedel**, Middletown, Conn., Dartmouth Medical School, Hanover, N. H., 1906, aged 52, died, Dec. 31, 1932, of coronary thrombosis

**George L. Dickinson**, Horatio, Ark., Medical Department of Arkansas Industrial University, Little Rock, 1892, aged 76, died, January 5, of pneumonia

**George Moore Wampler**, Jasper, Tenn., Vanderbilt University School of Medicine, Nashville, 1917, aged 39, died, Dec. 24, 1932, of pneumonia

**John Ayd**, Baltimore, College of Physicians and Surgeons, Baltimore, 1886, aged 79, died, January 3, in Hydes, Md., of carcinoma of the intestine

**Alfa R. Leib**, Elkhart, Ind., Homeopathic Hospital College, Cleveland, 1886, aged 72, died, January 2, of cerebral hemorrhage and influenza

**William Melvin Ruckle**, Wisconsin Rapids, Wis., Chicago Homeopathic Medical College, 1903, aged 55, died, Dec. 28, 1932, of thrombosis

**Isaac Newton Brent**, Crawfordsville, Ind., Hospital College of Medicine, Louisville, Ky., 1875, aged 87, died, January 13, of myocarditis

**Benjamin Burroughs Ralph**, Kansas City, Mo., Kansas City Medical College, 1897, aged 58, died, January 5, of coronary thrombosis

**John Dunphy**, Boston (licensed, Massachusetts, by years of practice), aged 60, died, January 1, in the City Hospital, of pulmonary embolus

**William Percy Miles**, Northport, N. Y., Long Island College Hospital, Brooklyn, 1892, aged 62, died, Nov. 27, 1932, of heart disease

**James N. Cunningham**, Stanley, Wis., Marion-Sims College of Medicine, St. Louis, 1899, aged 64, died, Dec. 30, 1932, of heart disease

**La Fayette Gracey**, Jonesboro, Ark., Memphis (Tenn.) Hospital Medical College, 1891, aged 67, died, January 1, of arteriosclerosis

**Clovis Mayrand**, Donnacona, Que., Canada, Laval University Faculty of Medicine, 1924, aged 33, died, Nov. 21, 1932

**August Kleykamp**, St. Louis, Missouri Medical College, St. Louis, 1888, aged 74, died, Dec. 6, 1932, of heart disease

**Sigmund Feinberg**, New York, University of Erlangen, Germany, 1871, aged 90, died, Dec. 14, 1932, of arteriosclerosis

**Grant Irwin**, Quincy, Ill., Quincy College of Medicine, 1886, aged 67, died suddenly, January 12, of heart disease

**James Gordon Berry**, Chicago, Rush Medical College, Chicago, 1875, aged 82, died, January 19, of myocarditis

**Richard Huizenga**, Rock Valley, Iowa, Rush Medical College, Chicago, 1902, aged 56, died Nov. 29, 1932

**Francis William Mincks**, Portland, Ind. (licensed, Indiana, 1897), aged 74, died, Dec. 26, 1932, of heart disease

**James Ashworth**, West Plains, Mo. (licensed, Missouri, 1883), aged 83, died January 8, of influenza

**Daniel Kerr**, Detroit, Detroit College of Medicine, 1889, aged 72, died, Dec. 15, 1932, of heart disease

## Correspondence

### DANGER OF SERUM IN ASTHMA

*To the Editor*—In THE JOURNAL, Dec 3, 1932, a report is made by the Bureau of Investigation concerning one Brengle and "forty successful treatments, including some sure cures," in which injections of diphtheria antitoxin are advised for the cure of asthma.

Jan 26, 1909, I read a paper before the New York State Medical Society entitled "Untoward Results from Diphtheria Antitoxin, with Special Reference to Asthma." The clinical history of twenty-eight cases was furnished in which either death or collapse followed the injection of horse serum. Fifteen patients died, thirteen experienced a severe shock, and one patient, after a year of illness, died. When death followed the injection, it came usually within ten minutes of the injection, from respiratory failure, the heart action continuing for some time after respiration ceased. Reports had been published before this date of death or shock following the use of serum, but this paper was the first to give publicity to the danger of administering horse serum to a person who had a history of asthma. Of the twenty-eight cases reported, twenty gave a history of asthma, hay fever, bronchitis, or some form of respiratory distress at times. Since this report was made the field has been well covered to determine some safe procedure to follow in administering horse serum to an asthmatic person, and it is astonishing to learn that any one advises the giving of serum to cure asthma. The foregoing may be water that has gone over the dam, but it may prevent any rash physician from following the advice and thereby save many lives.

H F GILLETTE, M D,  
Port Washington, N Y

### PHENOBARBITAL AND AMYTAL IN STRYCHNINE POISONING

*To the Editor*—In April, 1932, we published a report of an investigation on the antagonism between strychnine and phenobarbital sodium (Antidotes for Strychnine Poisoning, THE JOURNAL, April 2, 1932, p 1133). In our experiments, carried out on rats and dogs, we found that phenobarbital in large doses controlled strychnine convulsions and allowed recovery after five times the lethal dose of strychnine and that, conversely, strychnine acted as an antidote for phenobarbital sodium, allowing recovery after amounts three times that of the lethal dose.

M C Wheelock (Strychnine Poisoning, THE JOURNAL, Nov 26, 1932, p 1862) has recently reported a case of strychnine poisoning in which convulsions were controlled and a fatal outcome averted by the administration of 0.3 Gm of phenobarbital sodium and 1.3 Gm of sodium amytal given intravenously.

E E Swanson (*J Lab & Clin Med* 17 325 [Jan] 1932) has found experimentally that amytal sodium acts as an antidote against strychnine in rabbits and reports clinical applications of this drug in cases of strychnine poisoning by Zervas and McCallum (*Anesth & Analg* 8 349 [Nov-Dec] 1929).

Since our work was carried out on rats with the drugs injected intraperitoneally and theirs on rabbits with subcutaneous, intravenous and oral administration, it is difficult from the two reports to make comparison of the effectiveness of amytal sodium and phenobarbital sodium as antidotes for strychnine. We have therefore extended our investigation to include amytal sodium, using the method previously employed for phenobarbital sodium.

Instead of taking the minimal lethal dose as a criterion of toxicity as did Swanson, we used the absolutely lethal dose, the smallest amount from which none of the animals recovered. For rats given intraperitoneal injections of strychnine the absolutely lethal dose is 3 mg per kilogram. As reported, pheno-

barbital sodium allowed recovery after administration of from 12 to 14 mg of strychnine per kilogram—between four and five times the absolutely lethal dose.

In our recent investigation the substitution of amytal sodium for phenobarbital sodium allowed recovery after 7 mg per kilogram, or approximately two and a half times the absolutely lethal dose.

From these results it would appear that, for rats at least, phenobarbital sodium is more effective as an antidote against strychnine than is sodium amytal.

On rats, attempts to use a combination of the two drugs as an antidote, as did Wheeler, were found by us to afford no advantage. Amytal sodium and phenobarbital sodium for rats are not completely additive in their toxic effects, approximately two-thirds the lethal dose of each can be administered simultaneously without producing death in these animals, but the combination does not appear to afford a better antidote for strychnine than does phenobarbital sodium administered alone.

HOWARD W HAGGARD, M D,  
LEON A GREENBERG, PH B,  
New Haven, Conn

### "FUNCTIONAL CAPACITY OF THE LIVER"

*To the Editor*—In the article by Robertson, Swalm and Konzelmann in THE JOURNAL, Dec 17, 1932, appears an evaluation of the urobilinogen test. The success of the test always depends on the free flow of bile into the intestinal canal. As this may vary from day to day in certain pathologic states, it becomes necessary to examine the urine daily before any definite conclusion can be reached, in some instances. An afternoon specimen is more desirable in view of the physiologically increased postprandial activity of the liver. A strongly positive reaction is always indicative of parenchymatous damage to the liver cells. The *bete noire* referred to by Eusterman in his discussion on the differential diagnosis of jaundice can be readily overcome. When a strongly positive urobilinogen reaction appears in a jaundiced person in a urine containing bile, one may definitely conclude that one is dealing with a toxic hepatitis or catarrhal jaundice, which requires medical or expectant treatment. However, when a daily search for urobilinogen, in a urine containing bile, gives a negative reaction, one may feel definitely certain of the presence of a mechanical block in the common duct, requiring surgical intervention. This test is certainly much simpler than the repeated intubation of the duodenum in search for the presence of bile, which in itself tells but half the tale, as it fails to give information regarding the state of the liver parenchyma, which is readily obtained with the urobilinogen test.

The technical advantages of this test over the zinc acetate test for urobilin is that it requires no complicated laboratory steps but is a simple office procedure of which any practitioner of medicine can avail himself. It consists merely of the addition of Ehrlich's aldehyde reagent to a test tube of urine. The intensity of the red coloration may be expressed in terms of 1, 2, 3 or 4 plus, thus eliminating any quantitative tests for the general use.

May I also comment on the views expressed as to the preference by the authors of the icteric index to the van den Bergh reaction. The van den Bergh test is a direct reaction of bilirubin with the diazo reagent and is not due to any other factor. It appears inconsistent, therefore, to obtain a high icteric index in a serum giving a negative or low indirect van den Bergh reaction, as is quoted in the authors' series in case 10 under the cardiac group (table 1, group 1) giving an icteric index of 14 and a negative van den Bergh test, and in table 3, group 3, hepatic diseases, cases 63 and 67 with icteric indexes of 10 and 15, respectively, and low van den Bergh tests. The yellow discoloration is probably not due to bilirubin in such instances.

JOSEPH S DIAMOND, M D, New York



## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

### POSTMORTEM RESULTS IN ALCOHOLISM

To the Editor—Among other things the autopsy of a man of 45 disclosed that the chemical examination of the brain revealed the presence of 3 plus ethyl alcohol. Would this mean that, at the time of death the man was intoxicated? Is it possible in the case of a person addicted to the use of alcohol for the presence of this much alcohol in the brain to be due to accumulation without indulgence prior to his death? On what is determined the presence of 3 plus alcohol and how would such a calculation be made?

CHARLES WEINER, M.D., New York

ANSWER.—The man was intoxicated when he died. It would be impossible to obtain a 3 plus concentration of alcohol in the brain without the ingestion of alcoholic fluid during the twenty-four hours before death. An alcoholic addict could not build up any such concentration without taking in alcohol shortly before dying. Persons chronically addicted to the use of alcohol have an increased power to destroy or oxidize alcohol. The designation 3 plus ethyl alcohol means that the brain tissue contained 0.4 per cent of alcohol. The details for the determination of the amount of alcohol and the interpretation of the significance of the alcoholic concentration are described by A. O. Gettler and Arthur Tiber. *The Alcoholic Content of the Human Brain: Its Relation to Intoxication*, *Arch Path* 3:218 (Feb.) 1927, and A. O. Gettler, *Chemical Evidence of Alcoholic Intoxication and Their Medicolegal Significance*, *New England J Med* 201:725 (Oct. 10) 1929.

### REPEATED CORYZA IN A CHILD

To the Editor—My daughter, aged 6, is suffering from attacks of repeated head colds. During the summer months she is free, but in the fall with change in weather she goes down. I notice that inside of seventy-two hours following acute coryza a harsh metallic and unproductive cough develops. The nocturnal coughing persists until attacks of vomiting set in. It is with considerable difficulty that any nourishment taken by mouth can be retained for some days. The temperature is 102, pulse 90, respiration 28. Then all of a sudden the vomiting and coughing cease, the temperature becomes normal and the patient begins taking food with avidity. The tonsils and adenoids were removed four years ago. Roentgen examination of the chest is negative for tuberculosis. Examination of the urine is negative. She has had continued courses of malt viosterol and so on besides series of ultraviolet irradiations. Every care and consideration have been given to ward off these attacks of catching cold. What do you believe is at the bottom of her trouble: regrowth of adenoids, sinus involvement, food or other allergy, hereditary dyscrasia, too much coddling or what? Please omit name.

M.D. Ohio

ANSWER.—The clinical picture furnished seems rather typical for acute infection of the upper respiratory tract occurring at the onset of cold weather. Variations of this syndrome are common. The symptoms in this child include coryza, subsequent fever, development of cough apparently without positive chest signs, aggravation of nocturnal cough sufficient to provoke vomiting, and subsidence of symptoms with return of appetite. Vomiting may be dismissed as an individual peculiarity due to throat irritation and gagging. The return of an avid appetite is simply the compensatory phenomenon subsequent to a relative starvation. The remaining symptoms of coryza, fever, and significantly nocturnal cough may be considered as standard or constant symptoms in the so-called infection of the upper respiratory tract: influenza, grip, or cold.

Leaving aside such intangible and variable elements as infection, immunity, inherited predisposition and vitamins, the common factor is change in weather from summer to fall. This is tantamount to the familiar but insufficiently appreciated exposure to cold and damp. Exposure to cold is not necessarily measured in degrees registered by the thermometer but rather in terms of degrees of drop and increased humidity. Thus the child who suffers at the beginning of fall becomes acclimated and is able to endure colder weather later in the season. When the temperature drops precipitously in mid-winter there is another attack, and during such periods occur the familiar epidemics of so-called influenza.

The role of cold also explains the aggravation of the cough with paroxysms at night. Ordinarily the sleeping room temperature drops during the night hours and the body temperature falls likewise in loss of body tone incident to relaxation. The exclamation is probably the same: a tired, debilitated and cold person who "catches" the cold because of reduced body tone and lowered cellular activity. During the day the individual

is active enough to neutralize the chilling effect of cold and humidity by increased muscle tone. This general concept of the role of the heat regulating mechanism fits the clinical conditions even though the precise mechanism may not be accurately demonstrated. It seems possible that the direct etiology of this type of "upper respiratory infection" is the cold factor and that bacteria play a secondary part in point of chronology, particularly if it is remembered that the various bacteria isolated from the "common cold" are common inhabitants of normal individuals.

Since the child is going to suffer chance degrees of exposure, it is well to regulate her acclimatization. This may be accomplished simply by cold sprays, showers, rubs or ice rubs after a warm bath on retiring. During attacks the bedroom should not be chilled, and heat may be supplied to the respiratory tract by effective steam inhalations.

### PARACHLORMETAXYLENOL

To the Editor—A material known as parachlormetaxyleneol imported into this country by the Monsanto Chemical Works from its manufacturing plant in North Wales is used for the prevention of mildew, and is incorporated in a starch and tallow solution in the proportion of about 0.75 per cent. This solution is boiled for a given period and the point that I wish to determine is whether or not there would be danger in inhaling the fumes from this solution. For use in the cotton mills, this preparation is diluted in a starch and tallow solution to the extent of the final mixture containing about 0.1 per cent of the xylenol. This solution is boiled for an hour or two at the mills and I wish also to check up on the possible toxicity of the xylenol in this 0.1 per cent solution. Any information you can furnish me will be greatly appreciated. Please omit name and city.

M.D. Virginia

ANSWER.—Xylenols are the principal constituents of some coal tar cresylic acids. Chlorinated xylenols long have been utilized as insecticides, fungicides and bactericides. One of the virtues of this class of substances, as represented by their sponsors, is their negligible toxicity in distinction to the simpler phenols. Many trade names have come into being, such as "sagrotan," "phobrol," "grotan" and "thissiroil." The first named in 10 per cent strength has been recommended by Unna for application to the skin in scabies. Schottelius states that the substance is relatively nontoxic, as no harm is produced in dogs when administered orally in doses of 10 Gm per kilogram of body weight.

Parachlormetaxyleneol ( $C_8H_7OCl$ ), with its boiling point near 215 C., is little likely to evaporate in appreciable quantities even when in boiling water. The small quantities mentioned in the query further militate against practical danger from vapors. Use of similar chemicals in the treatment of skin lesions restrains the belief that skin irritation may be induced by high dilutions. Extensive toxicologic work with parachlormetaxyleneol is not known to have been carried out. For the present a high degree of toxicity apparently is not on record.

### USE OF TRIBROMETHANOL IN OPERATION ON HENRY FORD

To the Editor—Can you give me some information regarding the new anesthetic they gave Henry Ford when he was operated on for hernia? What was the name Avertin? What are its uses and action and how it is given?

FRED G. BUSHOLD, M.D., Lawrence, Mass.

ANSWER.—This question was referred to Dr. R. D. McClure, who replies as follows:

'The anesthetic given to the patient was avertin (tribromethanol) solution. It was given by rectum as a basal anesthetic supplemented with ethylene gas. Willstätter made the original preparation of avertin, which consists of the yeast reduction of tribromacetaldehyde and introduced it into Germany as a basal anesthetic agent in 1926. We have used avertin as a basal anesthetic for several years. Authorities agree that the safe dose should range between 60 and 100 mg. for each kilogram of body weight.

The patient goes to sleep in his room within ten to twenty minutes and remains asleep for a period of two to four hours, during which time the operation is carried out as well as immediate postoperative procedures such as intravenous therapy. The blood pressure usually falls on an average of 15 mm. or mercury; the pulse is usually not affected; the respirations are somewhat depressed. Overdose causes death by respiratory paralysis. Caffeine sodiobenzoate and ephedrine may be used to combat cyanosis if it occurs. Once a patient is narcotized with avertin only a small amount of ethylene nitrous oxide either or local supplemental anesthesia is required for good relaxation. Following the operation it is good practice to ventilate the lungs with carbon dioxide and oxygen as a prophylaxis against pulmonary complications, and this procedure was



used in the case under discussion. There is no recollection of events from the time of the injection until several hours later.

"The operation on this patient was for a strangulated femoral hernia, and a gangrenous appendix, due to the strangulation, was the only content of the sac. The appendix was removed through the same incision, and after the stump of the appendix had been inverted a high ligation of the sac was carried out by means of purse string sutures. A portion of Poupart's ligament was sutured to the pectineal fascia and muscle.

"Leigh F. Watson, in his book 'Hernia,' 1924 edition, found only 217 cases of femoral hernia of the appendix alone. Of these in only 181 cases was the sex given and of these only four were males. We have found so far only three or four other cases in the literature. We believe that a gangrenous appendicitis in the male due to strangulation in a femoral sac is an extremely rare condition and that successful removal of such an appendix through the hernia opening is still more rare. Realizing that many cases are not reported in the literature, I shall be glad to receive reports of any such cases from physicians who may chance to read these lines."

There are, of course, several other preparations that may be used for basal anesthesia.

#### ANTI-PRURITIC DRUGS

*To the Editor*—Can you offer some suggestions for an antipruritic which may be incorporated in an ointment base such as hydrous wool fat and petrolatum or cold cream? Though I make frequent use of 1 per cent phenol in washes (e. g., compound calamine lotion, N. F.) I have always been afraid to use it in ointments lest I cause some degree of necrosis. Menthol, the other standby of dermatologic textbooks has not given satisfactory results. Would it be desirable to combine 10 per cent benzyl alcohol, to produce an immediate effect, with 5 per cent ethyl aminobenzoate or 1 per cent butesin to yield a more lasting effect? I am assuming that coal tar solution in concentrations sufficient to be antipruritic is open to the same objections as phenol. In this connection, can you give me information about the active antipruritic principle in "Obtundia Cream," manufactured by Otis Clapp of Boston? Please omit name.

M. D., Massachusetts

**ANSWER**—Phenol, which has been called the "opium of the skin" because of its antipruritic action, may be used in a 1 per cent concentration in ointment without danger of necrosis, provided the application is not made under an occlusive covering. Nor would there be any objection to the employment of coal tar in suitable strength. Benzyl alcohol might be worth trying as an antipruritic, but not ethylaminobenzoate or butesin, because the two last mentioned do not exert anesthetic effect when applied to the intact epidermis. "Obtundia Cream" has not been examined by the Chemical Laboratory of the American Medical Association, its composition is not declared by the firms advertising or in catalogues in the Laboratory files. In addition to making extravagant claims as to its analgesic value, it has been stated that the manufacturers claim the major constituent to be "a molecular compound of 1,7,7 trimethyl-bicyclo (2,2,1) heptanone-2 and 1-methyl-3-hydroxy-benzene," which suggests that these ingredients are nothing more or less than camphor and metacresol.

#### ROENTGENS AND OTHER UNITS OF X-RAY DOSAGE

*To the Editor*—In *Queries and Minor Notes* (THE JOURNAL, Oct. 1, 1932, p. 1192) there is a query regarding aphonia after roentgen treatment. In the query occurs the following sentence: "I have given her three one-fourth unit doses of unfiltered x-rays at weekly intervals. In your answer you state that 'Assuming that a unit dose amounts to about 260 roentgens, the physician gave at each x-ray application about 40 roentgens.'" As one-fourth of 260 is certainly not 40, it is obvious that there is an error. Because of the fact that there are many men who do not know the relationship between roentgens and the older unit dose it would seem wise to have this little error in an otherwise excellent answer corrected.

H. H. HAZEN, M. D., Washington, D. C.

**ANSWER**—In the statement referred to, there is an arithmetical error, the number of roentgens corresponding to one-fourth of a unit of dosage being 65 instead of 40.

As explained in the second paragraph of the statement referred to, the modern and safer method of estimating dosage with roentgen rays is by calculating in terms of "roentgens" instead of a unit dose. The latter term was popularized by dermatologists, as representing the amount of radiation that would cause a slight erythema and bring about epilation. As a matter of fact, the differences in the judgment of various individuals as to what constitutes erythema makes this standard somewhat unsatisfactory. It also requires the therapist to do a certain amount of preliminary experimental work every time he acquires a new tube or uses his old tube under different conditions of line voltage.

Recognizing the unsatisfactory character of the unit dose standard, and in view of the international acceptance of the "roentgen" (symbolized as r) as the unit of dosage and its

employment not only in roentgen therapy but also in radium therapy and in ultraviolet and grenz ray therapy, it seems advantageous to adopt everywhere the international r as the unit in which to prescribe and record the dosage for roentgen applications. It is to be hoped that all users of roentgen therapy will fall in line in this practice.

The definition of a "roentgen" sounds complicated: "that quantity of radiation which, when the secondary electrons are fully utilized and the wall effect of the chamber is avoided, produces in 1 cc. of atmospheric air at 0°C and 760 mm. of mercury pressure such a degree of conductivity that one electrostatic unit of charge is measured at saturation current." Fortunately, the practical employment of the r as a unit of dosage measurement is simple if one acquires an r meter. There are excellent ones on the market of American manufacture, not too expensive. Such an instrument should really constitute an indispensable part of the equipment of every radiologist.

The number of roentgens that constitute the equivalent of the unit dose formerly spoken of varies with the voltage and with the filter employed. Using a peak voltage of 100,000, without filter, the administration of 260 r should produce a mild erythema and subsequent temporary loss of hair. With a small field under treatment, 260 r, previously calculated for a large field, would probably be insufficient. The therapist should measure for himself what his output is for fields of different size.

#### EFFECTS OF EMOTIONAL REACTION IN PRODUCING ABORTION

*To the Editor*—A woman six months pregnant was berated by her landlord and threatened with a foreclosure of a mortgage. She was badly upset. Three days later she noticed a loss of motion of the fetus. Four weeks later I delivered her of a dead fetus. The fetus showed signs of having died a considerable time before. Is it logical to assume that this emotional upset brought on the death of the fetus? Blood pressure readings and urinalyses had been negative previous to this. Examination of the cervix shows an old tear extending to the broad ligament.

M. D. Nebraska

**ANSWER**—Cases of a mental shock bringing on premature labor have been reported from Biblical times. In the First Book of Samuel, 4:19, 20, "the wife of Phineas when she heard the tidings that the Ark of God was taken and that her father-in-law and her husband were dead, she bowed herself and travailed, for her pains came upon her." She died but the baby lived.

Women have been frightened by thunder storms or other shock and reported that the babies died as the result. Abruptio placentae has occurred as a result of mental shock, likewise with death of the baby.

On the other hand, excessive mental and physical shocks have failed to disturb the pregnancy. For example, a woman was thrown on the floor by a drunken husband, who stamped on her abdomen with heavy boots and yet she did not abort. Another woman fell out of a third story window and crashed through the roof of a shed with no interruption of the pregnancy. Recently two cases occurred in Chicago of automobile accidents with fracture of the pelvis near term. Both patients recovered.

In the particular case mentioned, the probabilities are that something other than the mental shock killed the baby and possibly a mild infection traveling up a patulous cervix (both sides were deeply lacerated) caused the baby's death.

#### TAPEWORM INFESTATION

*To the Editor*—A man, aged 22, emaciated and underweight, has had tapeworm (*Taenia saginata*) infection for about ten years. A number of doctors have treated him without success. I put him on liquids for two days, with a daily laxative, and on the third day gave oleoresin of aspidium in broken doses 2 drachms (8 Gm.) in all, followed by a laxative of salts, but without results. The patient states that about twelve feet were recovered one time. The case is apparently an obstinate one, and I would appreciate any suggestion as to further treatment. I am unable to determine what other preparations have been used in his case. Please omit name.

M. D., South Carolina

**ANSWER**—In such a case it is necessary to wait for at least three months before repeating the attack, and then only if preglottides are passed. Pelletierine tannate is worthy of a trial, given after the usual preparation in a 0.5 Gm. dose followed in two hours by two tablespoonfuls of castor oil. If the bowels have not acted in an hour, an enema is given. The motions should be passed with the anus immersed in warm water. They should then be strained through black muslin. In case the worm does not appear after the cathartic has

acted, 2 cc. of carbon tetrachloride may be given, followed in one hour by another dose of a saline purgative, such as 15 Gm of sodium sulphate. Should this attack fail, a shotgun mixture might be used to hunt this elusive specimen, after the usual time required for the reappearance of segments in the stools has elapsed, to make certain that it is still there. Such a combination, containing nearly all the known anthelmintics, is the mixture composed of pumpkin seed, 8 Gm, cusco, 4 Gm, granatum, 4 Gm. This is made into an infusion, and to it are added kamala, 4 Gm, oleoresin of aspidium, 4 Gm, glycerin, 15 cc., mucilage of acacia, 15 cc., with water to make 240 cc. After the usual preliminary, this quantity is taken in two drafts two hours apart. Bastedo, from whose book this formula is taken, has several times seen severe gastroenteric irritation with vertigo and prostration result from this mixture.

#### BENCE-JONES PROTEIN

*To the Editor*—The urinalysis in a case that I am treating at present showed the presence of Bence-Jones protein. This along with the patient's history and physical examination, suggested the diagnosis of multiple myeloma which has been confirmed by roentgenograms of the skull spine and pelvis. A determination of the patient's blood urea was done the mercury combining power method being used. In coagulation of the blood with trichloroacetic acid a milky white precipitate formed in a layer between the serum and the bottom layer of blood cells. The test was repeated several times with fresh reagents and the precipitate always appeared. The same reagents were checked on blood from other patients but did not get any precipitate. Was this milky precipitate Bence-Jones protein in the blood which was brought down by the trichloroacetic acid? If so could not this test be used to detect the presence of Bence-Jones protein in the blood? I am unable to get any help from the available literature on this point. Any information that you can give will be greatly appreciated.

P D PRABODY MD, Webster S D

*ANSWER*—The Bence-Jones protein differs from all other proteins that occur in the blood or urine in its property of precipitating when heated to a temperature of from 45 to 65 C and of almost completely dissolving on boiling, to reappear again on cooling to from 65 to 85 C.

A second characteristic is the readiness with which it dissolves in dilute ammonia after precipitation with alcohol. The Bence-Jones body is also precipitated by those substances used in testing for serum albumins, as nitric acid (25 per cent) or trichloroacetic acid. It is precipitated by the addition of two volumes of saturated sodium chloride solution to the urine acidified with acetic acid. Two volumes of saturated ammonium sulphate causes complete precipitation. The precipitate can then be purified by washing with alcohol and ether, and dried over sulphuric acid. The Bence-Jones protein is free from phosphorus but contains from 1 to 2 per cent of sulphur. It can be distinguished from normal serum proteins by immunologic reactions (Hektoen and Welker).

The milky white precipitate that formed in the blood on addition of trichloroacetic acid was due to the presence of the Bence-Jones protein in the blood, causing a marked increase in the total blood protein. As much as 78 per cent of Bence-Jones protein has been found in the blood of patients with multiple myeloma. This interesting protein body may be found in the blood of some patients even when there is no Bence-Jones proteinuria. The reaction with trichloroacetic acid is simply a blood protein reaction and not specific, unless the precipitate possesses the characteristics mentioned.

#### OVARIAN CYST AND DYSMENORRHEA

*To the Editor*—Please explain as far as possible how the removal of a small ovarian cyst will cure a case of dysmenorrhea and help sterility in case that has been thoroughly worked up and nothing else found abnormal. Please omit name.

MD Massachusetts

*ANSWER*—The removal of a small ovarian cyst by no means uniformly cures dysmenorrhea or overcomes sterility, hence a patient should not be promised that these complaints will definitely be relieved by oophorectomy. Occasionally however dysmenorrhea does disappear temporarily or permanently after such an operation, and some women do conceive following this procedure. As is well known there is a strong psychic factor in many cases of painful menstruation, and this factor may be responsible for the disappearance of the pain during the periods that follow an operation. On the other hand some cases of dysmenorrhea are due to excessive amounts of female excrement in the blood but whether a small ovarian cyst can exert much influence on this hormone is purely conjectural. The cyst may have some detrimental effect on ovulation which may cause sterility but this is rare because small and even relatively large ovarian cysts are not usually associated with pregnancy.

Dysmenorrhea and sterility are the two most perplexing subjects in gynecology, and much patience and study are required to overcome them. It rarely happens that a simple cause is found to account for painful menstruation when the internal genitalia are normal. The same applies to sterility unless the husband is at fault.

#### DIABETIC RETINITIS

*To the Editor*—I should like help in every way but am asking specifically for a class of diabetic patients some of whom have been under observation for fifteen years. I should like especially to have assistance in these cases of diabetic retinitis with repeated hemorrhages ('retinal with floaters'). I have made it a rule to use insulin until the urine is sugar free. I have had a locomotive engineer under observation for fifteen years who uses insulin regularly twice daily. There was no sugar in the urine when the blood sugar was 180. He had diabetic abscesses two years ago and lay off in the hospital two weeks. There was sugar in the urine then, the blood sugar was 280. That is all the time he has lost in fifteen years. It seems to me that three divisions of medicine might concentrate to aid in these eye cases namely internists, ophthalmologists and those having special knowledge. I may add that none of my class show by any tests given any syphilis or other venereal disease. I shall be thankful for any additional information on this class of cases.

T E WALTON, MD, Danville Ill

*ANSWER*—There is no known specific for the clearing up of hemorrhages and exudates in the diabetic retina. Experimental study may throw much light on this question. The only safeguard at present is to have the patient follow his diabetic regimen.

In general, one keeps the urine sugar free with diet and insulin.

Today the carbohydrate in the diet would be at least 100 Gm, and as much as could be tolerated with moderate quantities of insulin. The protein for a man of 60 or more would be about 1 Gm per kilogram of body weight, and the fat in the diet sufficient to be able to maintain the weight at a proper level.

Seriously planned investigations on the conditions of the eyes in diabetic patients are in progress in more than one clinic, and undoubtedly detailed reports will be forthcoming within a year.

Often these patients show high blood pressures and trouble with the arteries, and consequently all the measures that are useful to combat such conditions in the nondiabetic hold for diabetic patients as well.

#### APHTHOUS STOMATITIS

*To the Editor*—I noted with much interest the inquiry about aphthous stomatitis on page 2285 of the issue of Dec 31, 1932. If no constitutional disease is present it is almost certain that some kind of poisoning effect is present either positively from something ingested, or negatively from a lack of certain elements that are needed.

There is no question that exercise in the open air is a help in some cases nor can the nervous factor be despised. Thorough mastication of food is most important in some cases the citrus group is most useful in my opinion though others forbid even minute amounts of any kind of acid. I have found in two cases that grapefruit juice plenty of it, daily was curative. My friend Dr C A Sullivan of Braintree Mass, with whom I have discussed the problem of canker sores many times thinks that a combination of zinc chloride solution with aromatics is by far the most satisfactory mouth wash and should be used strong. It is rather strange to me that the books on therapeutics are so neglectful of this condition as it can be exceedingly troublesome and persistent. I hope that this comment may be of some value to your correspondent.

GEORGE M SHEAHAN, MD Quincy, Mass

#### EPINEPHRINE OR EPHEDRINE IN CORONARY THROMBOSIS

*To the Editor*—When reading your answer to this question in THE JOURNAL, January 14 it came to my mind what should be known and understood by the profession generally i. e. the reversed vessel reflex produced by epinephrine in coronary vessel disease. Epinephrine causes dilatation of the coronary vessels but when they are diseased it has a tonic (contracting) effect on the vessels which Prof Hermann Schlesinger of Vienna thinks is due to vasomotor influence (contraction). He therefore advises against the use of epinephrine in coronary disease.

Asthma cordialis and asthma bronchialis should be carefully differentiated before treatment is begun and experience in the exhibition of medication in such cases is of great importance.

FREDERICK W MAYER MD St Paul

#### PENCIL FOR MARKING X-RAY FILMS

*To the Editor*—I have discovered that the best pencil for marking x-ray films is test tubes laboratory disks and writing on skin is milady's eyebrow pencil. The marks are easily erasable and the cost is very low.

M S SHANE, MD New York

Council on Medical Education  
and Hospitals

COMING EXAMINATIONS

ALASKA Juneau, March 14 Sec, Dr Harry C DeVighne, Juneau  
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS Milwaukee,  
June 12 Sec, Dr William H Wilder, 122-S Michigan Blvd, Chicago  
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The written  
examination will be given in cities of the United States and Canada  
where there is a Diplomate who may be empowered to conduct the  
examination, April 1 The general oral, clinical and pathological exami-  
nation will be held in Milwaukee, June 13 Sec, Dr Paul Titus,  
1015 Highland Bldg, Pittsburgh  
AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee, June 12 Sec.,  
Dr W P Wherry, 1500 Medical Arts Bldg, Omaha  
CALIFORNIA Los Angeles, Feb 27 to March 2 Sec, Dr Charles B  
Pinkham, 420 State Office Bldg, Sacramento  
CONNECTICUT Regular Hartford, March 14-15 Endorsement Hart-  
ford, March 28 Sec., Dr Thomas P Murdock 147 W Mam St,  
Meriden Homopathic New Haven, March 14 Sec, Dr Edwin C M  
Hall, 82 Grand Ave, New Haven  
MAINE Portland, March 14-15 Sec, Dr Adam P Leighton, Jr,  
192 State St, Portland  
MASSACHUSETTS Boston, March 14-16 Sec, Dr Stephen Rushmore,  
144 State House, Boston  
NEW HAMPSHIRE Concord, March 16-17 Sec, Dr Charles Duncan,  
Concord  
OKLAHOMA Oklahoma City, March 14-15 Sec, Dr J M Byrum,  
Shawnee  
PUERTO RICO San Juan, March 7 Sec., Dr O Costa Mandry,  
Box 536, San Juan  
WEST VIRGINIA Charleston, March 14 Sec., Dr W T Henshaw,  
State Health Department, Charleston

Georgia October Examination

Mr R. C Coleman, joint-secretary, State Examining Boards,  
reports the examination held in Atlanta, Oct 11-12, 1932  
Eleven candidates were examined, all of whom passed The  
following colleges were represented

College	PASSED	Year Grad	Number Passed
Howard University College of Medicine	(1931, 5), (1932, 2)		7
Bennett College of Eclectic Medicine and Surgery	(1901)		1
University of Illinois College of Medicine	(1931), (1932)		2
Cornell University Medical College	(1932)		1

Mr Coleman also reports 5 physicians licensed by reciprocity  
with other states from August 22 to October 12 The following  
colleges were represented

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Arkansas School of Medicine	(1929)		Arkansas
Tulane University of Louisiana School of Med	(1930)		Louisiana
Johns Hopkins University School of Medicine	(1929-2)		Maryland
Meharry Medical College	(1932)		Tennessee

West Virginia November Report

Dr W T Henshaw, secretary, Public Health Council of  
West Virginia, reports the written and oral examination held  
in Morgantown, Nov 16-18, 1932 The examination covered  
11 subjects and included 110 questions An average of 80 per  
cent was required to pass Five candidates were examined,  
all of whom passed Eight physicians were licensed by reci-  
procity with other states and two physicians were licensed by  
endorsement The following colleges were represented

College	PASSED	Year Grad	Per Cent
University of Illinois College of Medicine	(1931)		87 1
University of Maryland School of Medicine and College of Physicians and Surgeons	(1932)		86 7
Tufts College Medical School	(1925)		86 1
Jefferson Medical College of Philadelphia	(1930)		86 6
Medizinische Fakultät der Universität Leipzig	(1926)		80 6

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Georgia Medical Department	(1931)		Georgia
Indiana University School of Medicine	(1914)		Indiana
University of Louisville School of Medicine	(1931)		Kentucky
University of Maryland School of Medicine and College of Physicians and Surgeons	(1928)		Maryland
Medical College of Virginia	(1927), (1928), (1929), (1931)		Virginia

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Harvard University Medical School	(1928), (1930)		N B M Ex

Book Notices

Streptococci in Relation to Man in Health and Disease By Anna W  
Williams, M D, First Assistant Director Bureau of Laboratories Depart-  
ment of Health City of New York Cloth Price, \$5 Pp 260 with  
illustrations Baltimore Williams & Wilkins Company, 1932

This volume will be welcomed by every student of strepto-  
cocci It is a readable and comprehensive account of this per-  
plexing group, giving literature, history, morphology, cultural  
characteristics, serology, habitat, pathogenicity and classifica-  
tion In separate chapters various diseases caused by strepto-  
cocci are considered, including the rôle of streptococci, in  
local and general infections and as secondary invaders and  
opportunists

The first two chapters are devoted to an historical sketch  
and to a discussion of general characteristics chiefly in rela-  
tion to classification The author especially stresses serologic  
relationships and insists that since many of these are inti-  
mately related to pathogenicity and are reasonably permanent  
they should have some weight in species determination The  
limits of certain serologic tests, however, especially exotoxin  
neutralization, remain undetermined, as indicated in the follow-  
ing quotation "The Dicks claim that scarlet fever hemolytic  
streptococci have one kind of toxin Birkhaug claims that  
hemolytic streptococci from erysipelas have another specific  
toxin We, and others with us, do not agree that a clear cut  
disease specificity of hemolytic streptococcus exotoxin exists"  
She concludes these chapters with the statement that at this  
stage of our knowledge of streptococci any attempts at classifi-  
cation should be considered merely as a more or less temporary  
and practical aid for this study

In an important chapter on the incidence of streptococci,  
stress is laid on their intimate relationship to man and to  
lower animals and it is pointed out that, since they are uni-  
versally present, all persons should be considered as potential  
carriers of these dangerous streptococci

In the consideration of local and general infections in chap-  
ters 4 and 5, an analysis of the work of several investigators  
appears The elective localization theory of Rosenow is criti-  
cally examined pro and con at some length and the following  
concluding statement made "While we all know that strep-  
tococci may vary and dissociate to a certain extent and that  
they may become more accustomed to growing in one kind of  
tissue, the majority of us believe that the limits of these  
changes are not yet determined and that they need to be fully  
demonstrated before we can draw deductions as to their true  
significance and value"

The contributions of Gay and his associates and of Besredka  
and others on local immunity are presented lucidly in connec-  
tion with local infections, and an attempt is made to evaluate  
certain therapeutic applications, notably vaccines and intrave-  
nous chemotherapy The timely statement is made that "with  
the exception of syphilis and the like, no disease has shown  
evidence of responding satisfactorily to intravenous chemo-  
therapy"

Special chapters are devoted each to erysipelas, scarlet fever  
and septic sore throat, and the abundant literature on these  
subjects together with the large amount of work done by this  
author and her associates in New York is reviewed She calls  
attention to the borderline cases in these diseases and points  
out that several agglutination types of hemolytic streptococci  
may be found in each In other words, the clinical manifesta-  
tion of these streptococcal infections do not strictly parallel the  
serologic grouping of the organisms

Following these chapters is an interesting presentation in  
tabular form of a tentative classification of beta hemolytic  
streptococci based partly on antigenic reactions in which the  
varieties scarlatinae, erysipelatis and epidemicus are recognized

The possible rôle of streptococci in such a variety of dis-  
eases as acute rheumatic fever, chronic arthritis, endocarditis,  
influenza, colds and poliomyelitis is presented in a commenda-  
ble and impartial way and without attempting to draw final  
or dogmatic conclusions from a conflicting mass of data on  
problems evidently requiring far more study than has yet been  
given them

In reading the book, one obtains the impression that it is a  
report of progress On every page are statements or sugges-  
tions of problems still to be solved It is singularly free from

dogmatic assertions. In its concluding pages is a summary of practical facts that have resulted from investigations in this field. Among others may be mentioned that some of the most dangerous streptococci may be tentatively identified by differential mediums. Epidemic strains of certain streptococci may be demonstrated and their source determined and thus the epidemics controlled, for example, septic sore throat and scarlet fever. Progress in absorption agglutination tests has been made and the identification of carriers of special strains, though as yet unsatisfactory, may be accomplished in the future. Much has been learned about the poisonous products of streptococci in man and lower animals through intradermal tests. Evidently endotoxins and exotoxins exist the production of which by the individual strains may vary from time to time and under different conditions. Many strains, however, are fairly stable and constant in their reactions. The recognition of the role of a possible allergic state, especially in the "rheumatic state," while at present of no practical significance, may lead to further important experiments in desensitization.

The introduction to this volume is written by Dr. William H. Park, and a bibliography of twenty-seven pages containing many hundred references is given at the close. This contribution, together with the recent monograph of Andrewes and Christie and the exhaustive volumes of the Thompsons, should serve as a stimulus to further work in this important field.

**Maladies de l'intestin. Série II. Diverticules mégacolon dysenterie colites infantiles diagnostic de l'appendicite chronique tuberculose cancer traitement bismuthé dans les affections gastro-intestinales.** Par R. Bensaude médecin de l'Hôpital Saint Antoine. Avec la collaboration de A. Cain et M. Lelong médecins des hôpitaux et al. Paper. Price 70 francs. Pp 495 with 156 illustrations. Paris: Masson & Cie 1932.

This excellent volume is the second of a projected series dealing with diseases of the intestine. Although several co-authors have contributed to the work, it is noteworthy that Bensaude himself has written by far the greater portion. The first chapter deals with diverticulum of the duodenum, including a copious bibliography. Diverticula of the colon are then considered, and emphasis is placed on the point that the complications are more important than the parent disease. Considerable space is devoted to Hirschsprung's disease and its diagnosis by aid of roentgenoscopy and endoscopy. A chapter is devoted to pain in the right lower quadrant of the abdomen. The author takes a middle position in treatment, called by him the "opportunistic attitude" in contrast to the "interventionist" on one side and "abstentionist" on the other. Sound advice is given on surgical management in such cases. Chronic amebiasis, tuberculous ulceration and malignant conditions of the bowel are discussed in some detail. The concluding chapter is devoted to the use of bismuth subnitrate in disease of the gastro-intestinal tract. It is the opinion of the author that large doses, from 15 to 20 Gm a day, should be used. The danger of toxicity is negligible. The book is of value because it represents the attitude of one who has wide experience in his field and because the material is arranged for the clinician in everyday practice.

**Bailey's Text Book of Histology.** Revised by Adolph Elwyn, A.M. Assistant Professor of Neurology and Oliver S. Strong, A.M. Ph.D. Professor of Neurology. With the collaboration of Philip E. Smith, M.S. Ph.D. Professor of Anatomy. Aura E. Severinghaus, A.M. Ph.D. Assistant Professor of Anatomy. Wilfred M. Copenhaver, Ph.D. Assistant Professor of Anatomy. Russell L. Carpenter, Ph.D. Associate in Anatomy and Charles M. Goss, A.B. M.D. Assistant Professor of Anatomy. College of Physicians and Surgeons, Columbia University. Ninth edition. Cloth. Price \$5.50. Pp 746 with 229 illustrations. Baltimore: William Wood & Company 1932.

This work is being modernized by shifting of the emphasis from the details necessary for the identification of organs histologically to the details of cytology and histophysiology. The discussion of the nervous system remains a prominent feature but is no longer the only one. It has been changed chiefly in the elimination of the strictly neurologic matter dealing with fiber tracts and nuclei; this is to be published separately. The section on histologic technique has also been dropped so that much new material could be added and the book nevertheless reduced in size by nearly 200 pages. There are new chapters on the cell which include a stimulating survey of the methods of studying living and surviving cells, viz., tissue culture, vital staining, and microdissection. The chapter on the endocrine system presents a vast improvement over the treatment in previous editions. The beginner will appreciate its

physiologic summaries. Such sections are examples of erudition tempered by discretion and experience in teaching elementary students. Others, such as the section on the sense organs, are in the old stereotyped manner. Some have simply been modified here and there with the attendant mistakes and ambiguities. Old errors, such as the arteriolae rectae verae of the kidney, remain together with many hackneyed semi-diagrammatic illustrations, particularly in the chapters on the urogenital system. Some new figures are poorly chosen, thus, the only adequate illustration of a vein is from an aberrant type. Printing and make-up are good but there are some obvious typographic errors.

**Laboratory Service and the General Practitioner. An Interpretation of Pathological Aids to Diagnosis.** By Arnold Renshaw, M.D. B.S. D.P.H. Director of the Laboratory of Applied Pathology and Preventive Medicine, Manchester. With an introduction by Dan McKenzie, M.D. F.R.C.S.E. Cloth. Price \$2.50. Pp 287 with 8 illustrations. New York & London: Oxford University Press 1932.

A number of concise textbooks on laboratory diagnosis have appeared in the past few years in response to a demand by the profession. This book has been written with the purpose of informing the practitioner of medicine as to the conditions in which a pathologic laboratory can be of service to him. The author does not attempt to give the precise laboratory technique of each examination. For this purpose the reader is referred to more comprehensive textbooks. Though the organization of the book is essentially clinical and its method of presentation is practical, it lacks the critical evaluation of the works discussed; this must be considered a serious omission, for the author has not completely fulfilled his intended purpose to the reader. In the discussion of the differentiation of infection with bovine and human strains of tubercle bacilli, he advocates the tuberculin test. Recent studies have shown that this is of little aid. Another common error frequently found in books on laboratory diagnosis is the statement that the peroxidase reaction is of value for the differentiation of myeloblasts and lymphoblasts. Very young cells of the myeloid series are oxidase negative. The use of serum calcium estimations in cases of imperfect coagulation also is questioned. The text, however, is well organized and shows a sincere effort on the part of the author to present a comprehensive treatise. In general, practitioners of medicine will find this book of value in aiding them to select those laboratory tests which have the maximum application for the study of a particular disease.

**Foundations of Abnormal Psychology.** By Fred A. Moss, Ph.D. M.D. Professor of Psychology, George Washington University, and Thelma Hunt, Ph.D. Assistant Professor of Psychology, George Washington University. Cloth. Price \$4.50. Pp 548 with illustrations. New York: Prentice Hall Inc. 1932.

In the preface is the statement "This book is written from the point of view that places psychology in the group of the natural sciences, leaving out the metaphysical and speculative materials." On page 18, "It is a thesis of this book that so-called 'mental' factors do not cause disease (either physical or mental) except through their physiological effects." On page 21, "Mental disorders are to be defined just as other diseases are defined, as pathological conditions resulting from certain bodily disturbances." On the same page the authors classify mental disorders into two groups: "(1) those of which the cause and pathology are known, and (2) those about which nothing is known in regard to the underlying causes." On page 52, "The modern psychiatrist talks a great deal, and knows very little, about sex." These are fair samples of the qualities of this volume. Written from an unproved assumption—as a starting point it comfortably relegates to "bad habits" all mental disturbances outside the well known organic reaction types and a few others which the authors feel sure will be proved organic. It gives as physiologic (1) causes eight items without which mental disorders do not develop. These are bacterial infections, toxins, glandular disturbances, deficiencies in cell nutrients, deficiencies in nerve cells, tissue deterioration or old age, mechanical injury, and temperature disturbance. The authors admit that emotional factors may "cause definite organic changes sufficient to offer a physiological basis for disorder" but stubbornly refuse to give such emotional factors priority. Amnesia cases "are usually the result of rather sudden injuries to the nervous system." A catatonic person "becomes enraged and breaks up things, or may do himself or others bodily harm. He seems totally devoid of emotions."

One group of dementia praecox is attributed to focal infection and curable, but a few pages later it is stated that the infection and exhaustion psychoses can be differentiated from dementia praecox only by waiting for the mental symptoms to clear up when the infection is removed. There is no mention of preventing suicide in the paragraph on the treatment of manic-depressive insanity. In view of these points and numerous others, the frequent advice of the authors as to how to solve the problems of mental disorder is unwelcome. The book is neither a good textbook of abnormal psychology nor a safe introduction to psychiatry. Many quotations from Shakespeare, Lucretius, Francis Bacon and Edgar Lee Masters are interesting.

**Veröffentlichungen aus der Gewerbe und Konstitutionspathologie**  
Herausgegeben von L. Aschoff, M. B. Schmidt, M. Borst und L. Pick.  
Geleitet von W. Koch. Heft 33. Band VIII, Heft 1. Experimentelle Untersuchungen zur Histopathologie elektrischer Hautschädigungen durch niedergespannten Gleich- und Wechselstrom. Von Priv.-Doz. Dr. G. Schrader, 1. Assistent am Institut für gerichtliche und soziale Medizin der Universität Bonn. Paper. Price, 6 marks. Pp. 72, with 27 illustrations. Jena: Gustav Fischer, 1932.

This valuable monograph deals with the effects on the skin of low tension direct and alternating electric currents. A short statistical review of the subject is given under the heading of the importance of electropathology to medical jurisprudence and in relation to industrial accidents. Jellinek has asserted that the injury produced by an electric current is characteristic and diagnostic. Others dispute this. Schrader, by a careful study of such injuries produced experimentally, attempts to settle the question. His third chapter takes up the literature of the subject in detail respecting each of the seven subdivisions of Jellinek: the electric current injury or mark, the electrical or lightning figures, electrotraumatic wounds, electrolytic changes, electrical metallization, electrical burns and mixed forms. Distant effects on the tissues are considered concisely and clearly. In the fourth chapter Schrader states his particular problem and his method of approach, discussing first the anatomic peculiarities of the skin of the guinea-pig and the rabbit's ear, because these were used in the work. The injuries caused by direct and alternating current and by heat are studied by histopathologic and histochemical methods. Then the vital changes taking place in the rabbit's ear following each of these injuries are studied. The results are presented in an admirably clear and concise manner, illustrated by excellent pictures. The fifth chapter discusses the effect of these observations on questions of medical jurisprudence and industrial pathology, and the conclusions are set forth in the next and final chapter. A complete bibliography is appended. This monograph should be read by all who are interested in the use of electrical apparatus or in the medical or medicolegal aspect of the injuries produced by electricity.

**Let's Operate**. By Roy H. McKay, M.D., F.A.C.S., and Norman Bensley. Cloth. Price, \$3. Pp. 361. New York: Ray Long & Richard R. Smith, Inc., 1932.

It is simple, indeed, for any medical author to exploit the mistakes of his confreres and to exaggerate the evidence of unnecessary operations, fee splitting and other weaknesses that have on occasion been apparent in medical practice. This volume is apparently a journalistic *tour de force*. Dr. McKay got important newspaper publicity when he first emphasized these facts and was apparently induced by the publishers to expand his original remarks into a book. This review is written some months after the book was first published, and the indications seem to be that as a sensation the book fell somewhat flat.

**Roundabout Harley Street: The Story of Some Famous Streets**. By Cyril Phillips Bryan. M.B., B.Ch., &c. Cloth. Price, 5s. Pp. 260. London: John Bale, Sons & Danielson, Ltd., 1932.

Here is an excellent account of the medical quarter of London. It concerns not only Harley Street but all the streets round about. It has a fine historical background and brings into the picture not only the famous physicians but also the Brownings, Dickens, Conan Doyle, Lord Byron, Wellington and many others. The book is extremely interesting, has been well written, and will afford a pleasant few hours to every physician who has more than a merely scientific interest in his profession.

**Pathologie und Klinik in Einzeldarstellungen**. Herausgegeben von L. Aschoff, H. Elias, H. Eppinger, C. Sternberg und K. F. Wenckebach. Band IV. Thrombose, ihre Grundlagen und ihre Bedeutung. Von Professor Dr. A. Dietrich, Direktor des Pathologischen Instituts der Universität Tübingen. Paper. Price, 8.80 marks. Pp. 102, with 26 illustrations. Berlin: Julius Springer, 1932.

The recent reports from numerous continental European clinics on an increase in the frequency of cases of thrombosis and embolism have renewed the interest in this important field of pathology. In a short and well written monograph, Dietrich, who with his associates has furnished valuable experimental and morphologic contributions to the problem of thrombosis, gives a review of the different factors involved in the formation of a thrombus. Coarse alterations of the vessel wall, changes in the condition of the blood and interference with the circulation are not sufficient to account for the different types of thrombi. They are factors that may be present or not and their extent in a given case is subject to great variations. Dietrich attributes particular significance to changes in the physiologic relations between the wall of the blood vessel and the blood. These changes manifest themselves morphologically in a swelling and activation of the endothelium and in the formation of deposits from the blood on the surface of the endothelium. When increased tendency of the blood to coagulate or slowing of the circulation is added to the local changes of the vascular endothelium, a thrombus results. The changes of the endothelium that lead to the thrombus formation can be studied in sensitized animals. Reinjecting the antigen brings about the characteristic endothelial reactions.

The role of infection varies. Thrombi may be formed locally near the site of the infection. The bacteria stick to the irritated endothelium of an adjacent vein into which they have been brought with the blood stream. It often takes careful dissection to trace a thrombus in a vein to the point of its origin. The second possibility is the generalized activation of the vascular endothelium from a focus of infection with thrombus formation distant from this focus in places where local conditions favor the coagulation of the blood.

While local thrombosis can be considered as a favorable reaction, progressing and recurrent thrombosis leads to "thrombus disease." Sudden changes in the relations between the blood vessels and their content produce massive coagulates of the blood, which are apt to become mobilized and to cause embolism. Embolism is the most serious complication of thrombosis. In 53.1 per cent of his cases of thrombosis, Dietrich encountered lung embolism, which in 35.3 per cent proved to be fatal. Dietrich states that when two thirds of the pulmonary circulation is eliminated, death results, but with pre-existent pathologic changes in the lung, the extent of embolization necessary to cause death may be much smaller. Crossed or paradoxical embolism is quite common, while retrograde embolism is of no practical significance. With regard to the increased frequency of thrombosis and embolism the author is skeptical. Statistical studies are subjected to too many errors to allow definite conclusions. In summary, infections are of much greater importance in causing thrombosis than are circulatory or myocardial failures. Attached to the discussion of the subject is a long list of references, which are restricted to the German literature.

**Prospecting for Heaven: Some Conversations About Science and the Good Life**. By Edwin R. Embree. Cloth. Price, \$1.75. Pp. 185. New York: Viking Press, 1932.

This volume includes a series of imaginary conversations between its author and a number of active minded thinkers. Through the text moves the Chinese philosopher Wu Ting, an imaginary individual who helps to smooth the discussions and to add both a philosophical and a humorous tone. Among the persons who enter into these discussions are C. M. Hincks, psychiatrist, Victor G. Heiser, sanitarian, Charles H. Judd, psychologist, Franz Alexander, psychoanalyst, Howard W. Odum, known for his work in social science, and Margaret Sargent. Among the topics discussed are particularly questions of sanitation and mental hygiene. Professor Alexander recites the story of the development of psychoanalysis. Mr. Embree seems to have been able to present, thus, in a most easily readable form, the points of view of these leaders of thought. The conclusion of the volume is that well recognized aphorism that each man makes most of his own hell or heaven.



*Lehrbuch der klinischen Untersuchungsmethoden für Studierende und praktische Ärzte* Von Prof Dr H Sahli. Band III. Seventh edition. Paper. Price 52 marks. Pp 776, with 259 illustrations. Leipzig & Vienna: Franz Deuticke 1932.

The third volume of the series by Sahli on clinical methods covers a variety of subjects. It opens with a treatment of the methods of investigating the mouth and upper respiratory passages. Esophagoscopy, laryngoscopy and tracheoscopy receive adequate consideration, but bronchoscopy and ophthalmoscopy are briefly discussed. The examination of the esophagus and discussion of the clinical conditions that involve the esophagus are given considerable attention. A well written chapter on examination of fluids and material obtained by needle puncture follows. The presentation of this aspect of clinical examination is quite full and is well done. The major portion of the book deals with the subject of neurologic examination. The author makes a plea that neurologic examination be not treated in a stepmotherly fashion, and that it be not separated from the general medical clinic as a thing apart. He emphasizes the important interrelationships of neurology to general medicine. Comparable in the same manner as the nervous system is the integrating organic structure of the entire organism. In his treatment of the various neurologic problems he constantly correlates theory with practice, so that physiologic and pathologic considerations are at all times intimately bound with presentation of methodological detail. There is an excellent general consideration of neurologic phenomena, dealing with problems of disturbance in consciousness, motor disturbances, sensation, testing of reflexes, trophic changes, vasomotor and secretory abnormalities, occurrence of edema in nervous disease, and a full discussion of electrodiagnosis including a moderately detailed discussion of chronaxia. This section includes the discussion of lumbar, suboccipital, cisternal and ventricular puncture, roentgen investigation and encephalography. The special part presents excellently and at some length a systematic discussion of investigation of the cerebral nerves and of hemiplegia, monoplegia, aphasia, apraxia and agnosia. The physiology and symptomatology of the different levels and parts of the nervous system are treated with no apparent omissions. Focal symptomatology of brain tumors is completely discussed. Then follows a discussion of the spinal cord, the peripheral spinal nerves and the sympathetic and parasympathetic systems. Striated conditions receive a special chapter. A short chapter on so called general neurosis (nervosity, neurasthenia and hysteria) is included. The author's treatment of the latter subject is nonfreudian. Diagrams and pictures are included where they add to the understanding of the abnormal processes underlying the clinical phenomena. All in all, this is an excellent discussion in clinical investigation of the nervous system but is lacking in sufficient detail for the clinical investigation of other systems.

*The Torch of Life. A Key to Sex Harmony.* By Frederick M. Rossiter, B.S., M.D. Licentiate Royal College of Physicians, London. Cloth. Price \$2.50. Pp 214. New York: Avenline Corporation 1932.

This is another of the volumes developed recently as a guide to the newly married in the technic of sex performances. The author has attempted to treat the subject with delicacy, but in his desire to make beautiful a matter that is essentially anatomic and physiologic he waxes lyrical. He gives accurate descriptions of the sex organs and pictures the love drama as a performance in which the male is primarily responsible for successful consummation. He discusses as usual the various postures and regions of excitation. The concluding chapters deal with the first night and various esthetic relationships. The book seems to be as good as any of those that have recently been made available for the purpose and not a great deal better.

*The How and Why of Life.* By Emma Wheat Gillmore, M.D. Cloth. Price \$2. 1p 1c with illustrations. New York: Liverlight Inc. 1932.

This is another volume planned to enlighten the young on the nature of procreation and sex. It begins in the zoo and goes through all the animal species including insects and the algae. The author says little indeed about the sex process in man. The book ends with a chapter preaching self control. The book is well done, illustrated, and forms an excellent introduction to the subject of sex for boys and girls of high school age.

## Miscellany

### THE PRICE OF RADIUM

In an editorial entitled "Radium in the United States," THE JOURNAL, Nov 5, 1932, stated that there is a need for more and less expensive radium, especially for the treatment of cancer. Radium-containing ores have been found in about nine countries, but only two countries are producing significant quantities of radium salts. Mr F C Schmelkes offers an explanation for this situation by pointing out that there is at present a radium monopoly which controls the amount of production of radium salts. To support this statement, he cites editorials published in *Industrial and Engineering Chemistry*, July 1, 1929, and Nov 1, 1931, parts of which are as follows:

#### THE RADIUM MONOPOLY

"Monopolies are not necessarily detrimental to the public interest. It is only when undue advantage is taken of the situation created by them that there is cause for complaint. One indication that a monopoly exists is to be found in the maintenance of artificial prices, which has frequently been accomplished by the rigid control of production. An example is found in diamonds, which would sell for but a fraction of their market price if the mines were really worked to capacity and the product placed in the channels of trade. By curtailing the quantity of stones reaching the retailer, there has been created and maintained not only an artificial price for the cut diamond but, curiously enough, an entirely unjustified feeling on the part of many that diamonds constitute a safe investment. The losses taken by those who have tried to sell an occasional fine stone prove the contrary. It matters very little to the well being of the people whether those who control the diamond situation dictate that the stones shall be sold at ten dollars or ten hundred dollars per carat.

"The radium situation is a very different matter. There is a considerable body of authoritative opinion to the effect that radium, when used skilfully and in sufficient quantity, still offers the best means known for the treatment of certain types of cancer, to mention but one important application relating to the maintenance of health and the defeat of disease.

"Among those prominently identified with the study and production of radium is R B Moore, now dean of science at Purdue University. We quote a recent letter from Dr Moore:

"Up to 1912 the United States bought such radium as it needed from Europe. After that date, thanks to the efforts of the United States Bureau of Mines, the Standard Chemical Company, and later on other companies, this country became the largest producer of radium salts in the world. The discovery and development of rich uranium deposits in the Belgian Congo finally made it impossible for our American plants to compete, and they have all been shut down for a number of years. The world supply of radium is produced in Belgium by the Union Miniere du Haut Katanga.

"When radium was made from 2 per cent ore it sold for about \$110,000 per gram of element. At the present time made from 40 per cent ore it was selling in retail quantities for \$70,000 per gram. The wholesale price in large quantities purchased direct from the Belgian company is from \$50,000 to \$60,000 per gram.

"The production of the radium company has been naturally only large enough to take care of the demand. When the writer was in Europe last summer there were about 400 tons of 40 per cent ore ready for treatment in Belgium. This would give, allowing an 80 per cent extraction, 33 grams of radium element. Ore of 15 to 20 per cent  $U_3O_8$  is not treated by the Belgian company and is left in Africa. There is a very considerable amount of this ore available.

"The actual costs of the company for producing radium are not known but it should be very easy to obtain this rare element from 40 per cent ore for about \$10,000 per gram, exclusive of mining costs and overhead.



"Meanwhile, thousands of cancer patients are dying every year who do not have an opportunity of being treated by radium, which, at the present time, is the only successful treatment for cancer outside of an operation. A larger production and a much wider distribution would mean an additional number of lives saved."

"We are further informed that the plant of the Union Miniere du Haut Katanga in Belgium, after having produced an amount of radium rumored at one hundred grams in excess of the market demand at the time, closed and was not reopened for operations until the stock of radium salts on hand had been taken at the prices established by the company. While the belief that the Belgian Congo contains great quantities of ore from which radium can be extracted and that these deposits are now hidden in order to maintain high prices may be erroneous, nevertheless it is known that the one or two outside men who have been permitted to visit the mines did so only after making solemn promises to maintain secrecy. We are informed by one who visited the plant in the early days that the cost at that time was not over five thousand dollars per gram of radium. While the ore then shipped was probably richer than that which goes to the plant today, it is nevertheless a simple matter to concentrate uranium oxide ore to any richness desired, water being available as it is in Katanga."

"The manufacturers and producers of a luxury may ask a price which returns an unreasonable profit and no one complains seriously, for we can dispense with luxuries. A hoarder of food who endeavors to extract a fabulous profit for a necessity would be given no mercy. What shall be said, then, of a company which, though numbering among its stockholders citizens of other lands, is nevertheless controlled by those identified with a country which sought and was given the help of the world, and which now demands the utmost the traffic will bear for a material which to many means the difference between life and death? It is not a pleasing picture. There has been no great outlay of time and treasure involved in the location of a deposit which some lucky circumstance placed on Belgian-controlled territory, nor has the company been required to perform tedious and time-consuming research in the development of a reduction method. Neither has it been found necessary to seek a market for a new product. That a reasonable profit is deserved by those who conduct commercial enterprises, whether they manufacture medicines or machinery, is accepted. It is when a life-giving element is maintained artificially at a price which limits its availability to suffering mankind that we raise our voice in protest."

#### WILL CANADA BREAK THE RADIUM MONOPOLY?

"Discoveries made this past summer in remote regions of Canada have disclosed deposits of pitchblende to which we may confidently look for supplies of radium sufficient to break the Belgian monopoly."

"On several occasions we have commented on the extreme richness of South African ore, the working of which has enabled the production of salts of radium at costs so much below those heretofore possible elsewhere as to give the Belgian company owning these resources a world monopoly in a substance far more important therapeutically than it is ever likely to become industrially. While the company in question has been most secretive as to the extent of its deposits, the richness of its ores, and of course the cost of winning radium from them, enough is known to render our belief unalterable that, had a different policy been adopted, there would be today nothing like the number of skilful physicians and surgeons estopped, by the lack of sufficient salts of radium, from accomplishing the utmost against one of the most dreaded diseases of mankind. Rather than be content with a fair profit on its operations, the Belgian company has seemed to prefer a policy which is copied from that pursued in the diamond market, where prices are maintained at a fictitiously high level by the simple process of controlling production. This results in prices unnecessarily high, but rich ore resources constitute a threat to those working with poorer ores and they could not possibly attain a cost sufficiently low to permit them to remain in competitive production."

"Now, in Canada, according to the report of Hugh S. Spence, Department of Mines, Ottawa, there have been found at LaBine

Point, in the Great Bear Lake region, very important deposits of pitchblende, occurring in several extensive veins, some of which run deep at points where pits have been sunk. Ore, which may be expected to yield several thousand tons of high-grade pitchblende as well as a lesser amount of milling ore, has already been found in two veins. Some of the deposits run under small lakes, and underground explorations of these and other veins will probably materially increase the amounts now estimated as occurring in this region. More than that, during the past summer 20 tons of pitchblende running between 40 and 50 per cent uranium oxide were taken by airplane to the rail-head and an additional 20 tons have been mined and are ready to be transported. So far as we are aware this is the first time ore in such considerable quantities has been moved by airplane. While the cost of such transportation is high, the values easily justify the expenditure, pending the time when concentrating mills will be located on the property. The 20 tons that have been brought out will yield from 2 to 25 grams of radium."

"The richness of this ore, together with the low cost of mining it, indicate that here, at last, is a deposit well able to match itself against those in South Africa. The men who own it and who have formed a company for its exploitation fortunately are primarily interested in the humanitarian uses of radium, though naturally entitled to a fair return for their several years of prospecting, labor, and monetary investment."

"It is to be devoutly hoped that, as a result of this discovery, supplies of radium may soon be made available, within their ability to purchase, to the number of highly trained men who are skilled in its use and capable of applying it for the alleviation of human suffering."

## Medicolegal

### Death After Administration of Local Anesthetic

(Johnson v. Arndt (Minn.) 243 N. W. 67)

The defendant, a licensed physician, undertook to perform two tonsillectomies, one immediately following the other. To each patient he administered a local anesthetic, nupercaine,<sup>1</sup> by injection into the tissues surrounding the tonsils. One patient died in the operator's chair. The other died soon after the operation. The physician issued death certificates for both patients, assigning the cause of death in one case as "heart failure," with myocarditis as a contributing cause, and in the other case as "acute dilatation of the heart," with myocarditis as a contributing cause. The reported decision does not show the concentration or the quantity in which the drug was used, nor disclose any evidence of any official investigation into the causes of these deaths.

The husband of one of the deceased patients, as administrator of her estate, sued the physician on account of her death, alleging negligence by the physician. Judgment was rendered against the physician and he appealed to the Supreme Court of Minnesota.

The defendant physician testified that there was no negligence nor want of care on his part. He obtained the anesthetic, an imported preparation, from well known chemists and manufacturers of drugs in New York City. He had used the same preparation in other cases during a period of about nine months immediately preceding the death complained of in this case. The proper amount of drug was used, according to his testimony. There was no mishap, nor anything out of the ordinary in the course of the operation. There was no excessive bleeding then or afterward. In his opinion a blood clot, forming somewhere and clogging the circulation, caused the death of the plaintiff's wife. The death of the other patient who died on the same day was due, in the opinion of the defendant, to her supersensitiveness to the anesthetic, which could not have

<sup>1</sup> Nupercaine is a local anesthetic acting like cocaine when applied to mucous surfaces and like procaine or cocaine when injected, the action being relatively prolonged. Nupercaine is about five times as toxic as cocaine when it is injected intravenously into animals. Death has been reported after the subcutaneous injection of 135 cc. of a solution of 1 in 1000. —New and Nonofficial Remedies, 1932, p. 48.

been ascertained by any prior examination, however careful or complete.

The plaintiff, the Supreme Court pointed out, failed to meet this testimony of the defendant by any direct or opinion evidence. He presented no physicians as witnesses and no medical evidence, expert or otherwise. The most he did was to point out certain circumstances and certain statements alleged to have been made to others by the defendant and by the nurse who was present at the operation. The defendant was alleged to have told the plaintiff's witnesses that he did not know what caused the death and to have stated at another time that "it was like a game of cards, and he played the wrong card." The evidence showed that the defendant undertook to perform a tonsillectomy on another patient either immediately before or immediately after the operation on the patient whose death formed the basis of the present suit, and that that patient died while in the operator's chair. The defendant made no examination of any kind of the bodies of his two dead patients. After examining the containers from which the anesthetic was taken, he threw them away.

No evidence was offered, said the Supreme Court, to show that the defendant injected into the throat of his deceased patient an excessive amount of the anesthetic or any other poison. The fact that the patient died from or immediately after an operation is not sufficient to charge a physician with negligence. In this case, however, it was asked, on behalf of the plaintiff, substantially that the jury be permitted to infer first that the defendant had done something which he was not shown to have done, and then to base on that inference the further inference that what the defendant was inferred to have done caused the death of the deceased. Inferences may not safely be carried that far.

The rule of *res ipsa loquitur* does not apply under circumstances such as those in the present case. It has been applied in some malpractice cases, but only when there was direct evidence as to the cause of the injury, as for instance failure to remove all of an afterbirth, or a roentgen burn following the making of a roentgenogram. In the present case, there was no such evidence. If there had been evidence to show that the defendant had used an excessive amount of an anesthetic or other dangerous poison, the jury could well have found that he was negligent and then have inferred and found that his negligence caused the death, but the foundation for a finding of negligence was wanting.

The judgment of the trial court was therefore reversed. There seemed to be, however, some probability that evidence might be available to throw further light on the case, and the Supreme Court therefore refrained from granting judgment for the defendant physician.

In concurring decisions, two of the judges suggested that from the evidence in the case the jury could have concluded that the patient whose death forms the basis of the present suit was the second of the two patients operated on, that the fatal result in the first case was known to the defendant before he proceeded to operate on the second patient, and that therefore it was negligence for him, without the precaution of an investigation into the cause of the first death, to use on the second patient the same anesthetic that had apparently proved fatal to the first.

**Dental Practice Acts Unlicensed Practice**—The defendant was prosecuted for practicing dentistry without a license. A witness, who apparently was an investigator for the board of registration and examination in dentistry, testified that on several occasions the defendant took impressions of his gums, made impressions in wax or a rubber compound and in plaster of paris made dentures and fitted false teeth in his mouth. This evidence was uncontradicted. The trial judge found that the defendant had acted on the pleading of the witness and dismissed the complaint. The board then appealed to the supreme court of New Jersey. The dismissal of the complaint said the supreme court was not justified. Uncontradicted evidence was adduced to the effect that acts had been done which constituted the practice of dentistry within the meaning of the dental practice act. The defendant himself testified that the work which he did was of a character which should have been done by a dentist. The case was remanded to the lower court for a retrial.—*State Board of Registration and Examination in Dentistry (N. J.) 304 229*

## Society Proceedings

### COMING MEETINGS

American Orthopsychiatric Association New York, February 23 25 Dr George S Stevenson 450 Seventh Avenue, New York, Secretary  
Annual Congress on Medical Education, Medical Licensure and Hospitals Chicago February 13 14 Dr W D Cutter, Council on Medical Education and Hospitals, 535 North Dearborn St Chicago, Secretary  
New York Medical Society of the State of, New York, April 3 5 Dr Daniel S Dougherty, 2 East 103d Street New York, Secretary  
Pacific Coast Surgical Association Del Monte, Calif, February 23 25, Dr Edgar L Gilcreest 384 Post Street, San Francisco, Secretary  
Southeastern Surgical Congress Atlanta, Ga March 6-8 Dr B T Beasley, 45 Edgewood Avenue Atlanta, Secretary

### SOUTHERN SURGICAL ASSOCIATION

Forty-Fifth Annual Session held at Miami Fla., Dec 13 15 1932

The President, DR ROBERT S CATHCART, Charleston, S C, in the Chair

#### Ureteral Calculi

DR GEORGE R LIVERMORE, Memphis, Tenn Stasis and infection play leading roles in the formation of ureteral calculi, but that stricture of the ureter is the sole cause is a statement that most physicians are unwilling to accept. The old idea of a nucleus or nidus being necessary for the formation of a calculus, such as a foreign body, a blood clot, a clump of pus, or bacteria still holds true, and the colloidal theory fits in with it, as its advocates assert that, when the colloids of the urine coagulate, they no longer hold the crystalline matter in solution but themselves in the coagulated state form a network, on which the crystalline material is deposited. Intravenous urography is one of the newer aids in clearing up the diagnosis, especially in calculi that do not cast a shadow on the x-ray plate. Years ago I devised a ureteral stone dislodger and later a ureteral dilator, both of which have proved of great value in assisting patients to pass ureteral calculi. The method consists in first ascertaining the functional capacity of each kidney. If at the first attempt I am unable to pass a catheter beyond the stone in order to make a phenolsulphonphthalein test and the patient's condition justifies further instrumentation, I pass catheters, bougies and the Livermore dilator to the stone and, by thus dilating the ureter below the stone, hope to cause its passage. Frequently the stone will pass after one treatment. When the stone is adherent to the mucous membrane because of spicules or irregularities on the stone or is embedded in the mucosa, it may sometimes be freed. A warning must be given as to the danger of prolonged attempts at cystoscopic removal of ureteral calculi, for if persisted in when the kidney function is failing or when catheter drainage does not cause the prompt subsidence of rigors, and fever, or in that type in which a catheter or a bougie cannot be passed beyond the stone, there is grave danger of causing destruction of the kidney and perhaps the death of the patient. It is recognized that patients with chronic kidney infections, provided their kidney function is fairly good, withstand acute attacks much better than those who have their first acute attacks. Such chronic cases often mask the seriousness of the true condition of the patient by their lack of grave symptoms.

#### Operation for Undescended Testicle

DR E DUNBAR NEWELL, Chattanooga, Tenn In my early operations for undescended testicle I frequently ligated the spermatic vessels to lengthen the cord sufficiently to place the testicle in the scrotum without tension. Even today, if operating on an adult who had a normal testicle on the other side, I would not hesitate to ligate the spermatic vessels, its removal of the vaginal process or the peritoneum and the severing of the fascial bands did not give the necessary length to place the testicle in the bottom of the scrotum without tension. The Torek operation might obviate the necessity of cutting the spermatic vessels, but many patients I am sure would prefer the liability of an atrophied testicle in the scrotum to a two-stage Torek operation. The ideal operation has been for me the Evvan operation with some slight modification. The ideal time is before puberty from 6 to 12 years of age. The goal is to free the vessels and the vas so completely that they are no longer covered or surrounded with peritoneum, peritoneal

bands or fascial bands, without injury to the vessels. I have found in doing hernia operations under local anesthesia that when the procaine hydrochloride is injected around the cord it makes the dissection of the vaginal process much easier with far less trauma to blood vessels. I utilize this principle in my dissection around the vessels and vas in my operations for undescended testicles. After the cord has been lengthened enough to remain in the bottom of the scrotum easily, a twenty-day number 2 chromic catgut ligature is passed on a straight needle through the gubernaculum testis and tied lightly. The two ends are then passed through the bottom of the scrotum one-half inch apart and tied to a rubber band, and the band is fastened with a little tension to a frame, or to the skin after the technic of Hugh Cabot. To me, this has been an ideal operation.

#### Cystectomy for Carcinoma of the Bladder

DR ROBERT C. COFFEY, Portland, Ore. In eleven cases, cystectomy for cancer of the bladder was done. Two women on whom the operation was done in two stages (first ureteral transplantation, second, cystectomy) are alive and well four years after the cystectomy. Two women with far advanced carcinoma of the bladder who had been treated on numerous occasions by radiation and fulguration died as a result of an attempt to do the combined operation at one sitting. It was bad judgment in both cases to do the operation that was done. The difficulties encountered in these two cases revealed special problems, which make the combined operation unpractical in women, even if the cases are favorable for operation. Seven men were operated on, six for primary carcinoma of the base of the bladder and one for primary carcinoma of the prostate. Of this number there was one surgical death, in no way connected with the kidneys. Necropsy showed that the cause of death was a septic heart condition. One patient died five and a half months after operation without the presence of a physician, and evidence obtained from the family was that death may have been due to something entirely foreign to the operation or to the disease. The other five men are alive and well. All have been seen or heard from within the last month. All have been examined within five months. I am now able to report seven symptomatically well patients with no evidence of recurrence in any case, four and a half years, three years four months, two years nine months, two years five months, two years four months, one year six months, and one year after operation.

#### Tumors of the Parathyroid Gland

DRS. FRED W. RANKIN and JAMES T. PRIESTLEY, Rochester, Minn. Although no one has had extensive experience in surgery of the parathyroid bodies, certain general principles and factors of safety have become evident. Wide exposure of the region may be obtained through the ordinary approach to the thyroid gland. As these tumors are frequently bilateral, it is important to examine both sides before starting local resection on either side. If this precaution is neglected, one may remove a small adenoma on one side only to find a much larger one on the other side, removal of which might leave an inadequate supply of functioning parathyroid tissue. The main danger in removing these tumors arises from their customary situation close to the recurrent laryngeal nerve. Adequate exposure and the hemostasis secured by ligation of the inferior thyroid artery before removal of the tumor aid in accurate and careful dissection. Local anesthesia, supplemented if necessary with a little gas, affords sufficient analgesia and permits early recognition of trauma to the nerve. After operation, one should always be prepared to administer parathyroid extract and calcium if necessary to avert tetany, for this is not an uncommon temporary development following removal of a tumor, apparently indicating an evanescent disturbance of parathyroid function during the period of readjustment after resection. At present there seems to be insufficient evidence to warrant broadening the scope of surgery of the parathyroid glands to include such diversified maladies as osteomalacia, Paget's disease, rickets, chronic deforming arthritis and generalized myasthenia. Experimental investigation has failed to elicit any data, to our knowledge, which definitely suggests a direct etiologic relationship of these ailments to dysfunction or hyperfunction of the parathyroid bodies. On the other hand, the typical clinical picture presented by the cases here cited

has been repeatedly reproduced by prolonged administration of parathyroid extract to the experimental animal. The general hygienic and dietary measures employed in the treatment of Paget's disease, osteomalacia and so on may be responsible for the improvement attributed by some authors to subtotal removal of the parathyroid glands, although the glands have been often reported normal to gross and microscopic inspection in these cases. We have seen similar temporary response in typical cases of hyperparathyroidism under medical treatment. Remissions are not uncommon, at least, to date no cases have been followed for a sufficient length of time to allow definite conclusions to be drawn regarding the efficacy of operations on the parathyroid glands in the absence of the characteristic chemical and skeletal changes indicative of the typical syndrome of hyperparathyroidism. Hunter, in England, who has had considerable experience with parathyroidism, is likewise of the opinion that cases of focal osteitis and osteomalacia are unrelated to generalized osteitis fibrosa cystica. The low level of blood calcium typically observed in osteomalacia, and also the frequency of spontaneous tetany are the antithesis of what is seen in hyperparathyroidism. Experimental clinical surgery of this type is not to be deprecated, however, when conducted by a scientific group of capable investigators, and it is to be hoped that the truth will soon be elicited.

#### Peripheral Nerve Symptoms in Goiter

DR ALEXIUS MCGLENNAN, Baltimore. In a case of nodular goiter with hyperthyroidism, there were symptoms suggesting pressure on part of the brachial plexus. The patient, a middle aged white man, was admitted to Mercy Hospital under the care of Dr. M. C. Pincoffs, who made the diagnosis and referred him to me for operation. The symptoms of hyperthyroidism were not definite. There was some general loss of strength, coarse and fine tremor of the hands, quick speech and movements. The facial expression was a little drawn. The pulse rate varied from 90 to 120. The basal metabolic rate on three occasions was 39, 42, 44. The thyroid was deep set, the isthmus thick and firm. There was a hard, almond sized nodule in the right lobe. The left lobe was firm and situated deep in the neck. The patient complained of severe pain in the left arm and forearm in an area roughly that of the distribution of the internal cutaneous nerve. At operation the firm nodular thyroid was found tightly wedged in under the muscles. The left lobe extended outward and backward a considerable distance into the neck. The isthmus and the greater part of both lobes were removed. The patient made a good recovery. Immediately after the operation the pain in the left arm disappeared and four months later had not recurred. Apparently this pain was caused by pressure of the left lobe of the thyroid on the brachial plexus, which was relieved by the removal of the goiter, but disturbance of the cervical sympathetic may be a factor.

#### Intestinal Anastomosis, with a Description of a Simple Aseptic Technic

DR W. D. GATCH, Indianapolis. In 1912 I published the results of an experimental study of aseptic anastomosis. The conclusion was stated that aseptic anastomosis is theoretically impossible but practically attainable. Cultures made from along the line of suture were sterile. Threads pulled through the intestinal walls just as they are used in suturing were found to be sterile in nearly all tests. The experiments demonstrated that the "contamination from the suture is so slight that the tissues are well able to cope with it." Prolonged clinical trial has now demonstrated the soundness of these results. I have found the methods reported in 1912 so satisfactory that I have decided to report them again with improvements which I have made. I advance the following claims for the technic employed. It is safe, easy to carry out and adaptable to every location where an intestinal suture is required, suture of the stomach excepted. Here, I do not consider any kind of aseptic suture safe because of the danger of hemorrhage. It does not require any instruments not in the possession of every surgeon. It makes possible primary healing of the abdominal wound in most cases after resection of the colon. This is a practical test for the efficiency of any aseptic technic. The completed anastomoses have practically the same sutures used in the best types of open operation, and

they are therefore just as secure and trustworthy as the latter. In clinical surgery I always use the lateral anastomosis, because I think it safer and because I have never observed any disturbance of intestinal function as a result of it. To secure the best possible functional result, the openings in the intestine should not be made over an inch and a half in length, and care should be taken to make the blind ends of intestine as short as possible. Bad function is more liable to result from too long an opening than from the blind ends. After observing the results of numerous end-to-end anastomoses, done on the experimental animal by every conceivable technic, I have been convinced that the operation is more dangerous than the lateral suture, and that in the small bowel it is actually more liable to give a bad functional result. I feel that the longer time required to make a lateral anastomosis is well spent.

#### Precolostomy for Inoperable Carcinoma of Rectum

DR HARVEY B. STONE, Baltimore. It is not unusual, on exploring cases of cancer of the rectum and lower sigmoid, to discover an inoperable condition. Such cases always present the probability of obstruction. To meet this situation, the operation of precolostomy is advised. This is done at the time of the exploration and consists of bringing the sigmoid out through a small left McBurney incision and fixing it so that a small cone of intestine is left protruding but not opened. This intestine heals into the incision and is easily available for completion of the colostomy at any time when it may become necessary. No additional anesthetic or operative procedure is required. A tube is simply placed through an incision in the externalized cone of bowel. Should obstruction never develop during the remaining life period of the patient, the precolostomy is never completed and the patient escapes the distress of having a colostomy.

#### Treatment of Irreducible Prolapse of the Rectum

DR MONT R. REID, Cincinnati. The first application of this method was in 1925 on a Chinese girl, aged 8, admitted to the Peiping Union Medical College Hospital with a sloughing prolapse of the rectum about 5 inches in length. The condition had been present a long time and it was obvious that no attempt should be made to reduce it. The external opening of the intestine was at the apex of the protruding mass. There was no evidence of intestinal obstruction. It was easy to insert a rubber tubing about an inch in diameter, into the prolapsed rectum and to pass it through the sphincter well up into the rectum. With this tube thus placed, several of us palpated the prolapse surrounding it and were sure there was no herniation of intestine into a peritoneal pouch. At the junction of the skin with the mucosa the edema was less, and it was at this point that palpation was most satisfactory and convincing. Consequently the tube was anchored in situ by means of a couple of heavy silk sutures at the apex of the prolapse. Next a constricting rubber band was placed round the prolapse at the normal surface level of the anus and just distal to the external sphincter muscle. This band stopped the circulation to the prolapse and also occluded any peritoneal pouch that might have been present. For several hours the child was watched most carefully for evidences of intestinal obstruction. At the end of two weeks, during which time there was normal defecation and expulsion of gas through the tube the entire prolapse sloughed away. A spontaneous anastomosis had occurred at the level of the rubber band. Tone quickly returned to the muscles and at the time of her discharge from the hospital there was good sphincter control and no evidences of rectal stricture. We believed that this procedure had definitely lessened the chances of peritonitis, which would have attended surgical amputation of the prolapse and suture in the presence of so much infection and necrosis. A similar procedure was employed on another patient in the same hospital and with as satisfactory result. In the clinic of the Cincinnati General Hospital there have been two other occasions when I felt that this method of treating an irreducible prolapse of the rectum was justified. In both instances the patients were adults and the prolapses had become irreducible and badly ulcerated at the time of their first appearance. There has not been an opportunity to follow the subsequent history of the Chinese patients. It has now been more than three years since we operated on the last of the two patients

in our clinic in Cincinnati, and both of them have remained well. Sphincter control has remained good. There is no stricture.

#### Congenital Stenosis of the Cardia

DR J. KNOX SIMPSON, Jacksonville, Fla. A boy, the second child of healthy parents, was born in St. Vincent's Hospital, Feb. 17, 1928, with normal delivery. Our pediatrician, Dr. T. E. Buckman, was called to take charge of the feeding. As nearly as one could judge, there was never from birth any food or water that reached the stomach. Feedings would be swallowed and after a few moments vomited. The vomiting was rather forceful at times. The general physical examination of the child was negative. A roentgen examination was made in search for a persistent thymus or some other cause for the obstruction of the esophagus. The first films showed nothing except a shadow near the hilus of the left lung, which was thought to be an enlarged mediastinal gland. The baby was then given a barium mixture with a medicine dropper and a slight amount trickled through into the stomach, but the majority of it remained in the esophagus, churning about for an hour in spite of the administration of atropine. Finally the barium was vomited. Efforts were then made to pass catheters and bougies into the stomach through the esophagus, but this could not be accomplished. An impassable obstruction at the cardia was encountered, which would not give way with as much force as was thought wise to exert. Efforts to get the baby to swallow a thread as a guide to dilation were unsuccessful. A recheck with barium sulphate was made the next day and the same condition was found. The baby was becoming somewhat dehydrated, and nothing was passing the cardia. Two courses were discussed. One was an effort to get by the obstruction with an esophagoscope, and the other to do a gastrostomy and later plan the dilation of the cardia. The latter course was chosen as being the least dangerous to the life of the child, so on the third day of the child's life a gastrostomy was done. Under local anesthesia a number 16 catheter was introduced into the stomach and fixed in position. An exploration of the cardiac end of the stomach and of the diaphragmatic opening at the time of the gastrostomy showed nothing of note except some crescentic bands extending from the fundus of the stomach up to the under surface of the diaphragm, in the region of the cardia. Feeding through the tube was begun immediately, and the baby began to improve and to gain weight normally. In ten days the tube was removed, and with a Braasch cystoscope passed into the stomach, a stenosis in the region of the cardia was easily located. It appeared as a small dimple, about the size of a small ureteral meatus. A number 6 ureteral catheter was passed through it without difficulty. As it reached the posterior wall of the pharynx the baby gagged and the end was easily picked up with a hemostat and drawn out through the mouth. A silk fishing line was threaded through the end of the catheter with a needle and the catheter withdrawn. The ends of the thread were tied together, thus making a continuous thread, to which could be attached dilators. The tube was then replaced for feeding, the string coming out of the opening alongside the tube. The next day, dilation of the cardia was begun. This was done with a graduated set of Jackson dilators, made of flexible rubber with a string through the center with a loop on each end. The dilators were tied to the end of the continuous thread and pulled through the gastrostomy opening and on through the cardia until size 24 was reached. They were then tied on above and introduced through the mouth and pulled through the cardia from below. Finally we made a hydrostatic dilator of small size by the use of glove fingers placed over the end of a rubber catheter. We used this, gaging the amount of dilatation by introducing a measured quantity of water into the catheter with a syringe. Dilation seemed to be somewhat difficult until we reached a size 24 dilator, after which time it was easy. None of the manipulations were accompanied by untoward reactions, and none seemed to give the baby much discomfort. Within three weeks the baby was taking a formula by mouth normally, and a recheck of the cardia showed no delay at this point. The gastrostomy tube was left in place for three weeks more, to make sure there was no return of the cardiac contraction, and was then removed. The gastrostomy wound was slow in closing. So three weeks later, under local anesthesia the stomach was freed from the abdominal wall, the opening closed, and

the stomach dropped back into the abdomen. The wound was closed, healing taking place without incident. The baby since then has followed the usual feeding and growth of a normal child, and is now a big husky lad, nearly 5 years old. There have been no symptoms of any kind referable to the gastrointestinal tract since the patient was finally dismissed.

#### Adynamic Ileus

DRS ALTON OCHSNER and I M GAGE, New Orleans. The causes of adynamic ileus may be intra-abdominal or extra-abdominal. The most frequent cause is exposure to air and manipulation during laparotomy. Adynamic ileus occurs earlier postoperatively than mechanical ileus. It is characterized by the absence of colicky, intermittent pain. Plain roentgenograms of the abdomen are of inestimable value in the diagnosis of all forms of ileus. The treatment of adynamic ileus varies according to the type. The prophylactic treatment consists of abandonment of preoperative and postoperative catharsis and the avoidance of unnecessary trauma and peritoneal contamination during the performance of a laparotomy. Physiologic ileus which occurs for varying periods of time following all laparotomies is treated by withholding the oral administration of all substances until nausea has ceased, by the application of heat to the abdomen, and by the administration of morphine. Water balance should be reestablished. Severe adynamic ileus is treated by transduodenal decompression by means of indwelling nasal catheters and remineralization of the patient. Hypertonic salt solutions ("hypertonic" Ringer's and "hypertonic" Hartmann's solutions) injected intravenously stimulate the intestinal movement. In severe cases one or more enterotomies are frequently necessary in order to decompress the dilated intestine. A splanchnic block (splanchnic or spinal analgesia) is often efficacious. Drugs are of little or no value.

#### Treatment of Cancer of Breast

DR BURTON J LEE, New York. Much of the statistical material as to end-results in the period up to 1915 had best be set aside as of little value in determining the present method of treatment. Unless the medical profession can reach a united conviction that early phases of mammary cancer are curable by radical surgery combined with irradiation, the whole effort in behalf of those suffering with cancer of the breast would seem futile. This paper is a report of the end-results in primary operable carcinoma of the breast at the Memorial Hospital, New York, treated by radical amputation combined with preoperative and postoperative irradiation. The number of patients reported is 217. Since the fall of 1919, when the Breast Clinic was established, the operations have been performed by myself and my colleagues. The general principles laid down by Halsted and Willy Meyer have been followed. Five, seven and ten year results have been tabulated and no case is reported in which operation was performed later than December, 1927. The weekly follow-up clinics carried on by each clinical department of the hospital offer an effective means of keeping touch with our patients. Five patients left the clinic before the expiration of the five year period and it has been impossible to trace them. This gives a follow-up figure of 98 per cent on 217 patients for a period of five years. A follow-up figure of 96 per cent was obtained in 130 patients followed for seven years, five of the cases being untraced. Two patients were lost track of in the ten year follow up on seventy-five patients, giving a follow-up figure of 97 per cent.

#### Palliation in Advanced Mammary Carcinoma

DR WILLIAM PERRIN NICOLSON, Atlanta, Ga. This paper calls attention to the large number of far advanced hopeless cases of mammary carcinoma and urges a more considerate attitude toward them. It is suggested that each case be considered as to probable duration of life, whether or not a slough is imminent, whether or not an immediate recurrence is likely, the radiosensitivity of the tumor, and the general condition of the patient. The cases are arbitrarily divided into five groups. Those in which nothing of benefit can be done but to administer narcotics, in this group fall the extensive recurrences and the very radioresistant tumors. Those who have the "inflammatory" type carcinomas and who are doomed to an early death, but who live about six months longer if treated by radiation alone. Those in which the primary tumor is operable but which have distant metastases, especially to

bone, these are palliated with radiation. Those best treated by radiation—external and interstitial, in this group are the very radiosensitive tumors, especially those in persons not otherwise physically able to stand an operation. Those cases which are obviously hopeless so far as a "cure" is concerned but in which the patients would be made more comfortable if the breast was removed, chiefly by ridding them of a foul smelling, sloughing mass, this group is stressed more than the others because these are the patients most likely to be neglected. The comfort of the patient is to be the guide and not the "statistics." Much more good frequently is accomplished than is hoped for, and the patient can rarely be made less comfortable. One or more cases typifying each of these groups, from the Surgical Service of Steiner Cancer Clinic, Atlanta, was reported.

#### Cancer Clinics

DR FRANKLIN H MARTIN, Chicago. Through its Committee on the Treatment of Malignant Diseases, the American College of Surgeons in 1930 undertook to develop throughout the United States and Canada a series of cancer clinics in connection with approved general hospitals and other approved institutional clinics where cancer is specially treated. By this means we can extend to all interested groups the privilege that was enjoyed by the limited number of clinics with which the committee of the college has cooperated, and also we shall be enabled to compile more comprehensive records of cancer and cancer cures. The difficulties, ethics, finances and plans of this stupendous undertaking have been carefully considered. It is our desire to have the voluntary cooperation of participants and to safeguard the proposed cancer clinics by establishing standards under which they can be approved after personal surveys. There are 158 definitely organized cancer clinics, at least 100 of which merit full approval, 155 others have discussed the plan with our trained visitors, and most of these have shown facilities and either have started organization or show an inclination to do so. Our clinics have their problems. Through what means will the public learn of cancer clinics? If a clinic is organized to warrant approval of the college, this fact will be made known to the medical profession, the college, after a representative number of clinics have qualified, will release the information to the lay press, as is the custom with accepted hospitals, but the name of the clinic will be eliminated, the public will be directed through the same publicity to obtain facts about approved clinics from the family doctor, from approved hospitals, or from the officials of their respective county medical society. The American College of Surgeons in its sectional and clinical meetings will continue to inform the audiences that in their midst they possess diagnostic cancer clinics. The question "Where are these clinics?" will be answered by "Ask your family doctor."

#### Cardiac Decompensation Following Arteriovenous Fistula of Subclavian Vessels

DR J M MASON, Birmingham, Ala. In a previously healthy woman, an arteriovenous fistula in the first portion of the left subclavian vessels was diagnosed forty-eight hours after the infliction of a stab wound beneath the left clavicle. Locally, during the healing of the wound a thrill and bruit became marked and widespread. There was no complaint of severe pain, but the patient was much disturbed by the noise of the bruit and by a sensation of oppression in the chest. There was no tumor. Peripherally there were no varicosities, nor was there any edema of the extremity. The pulse in the involved side was weaker and the blood pressure was lower than on the sound side. There developed, within six weeks of the injury, every discomfort that could well take place from a decompensated heart, pleural and peritoneal effusions, enlargement of the liver, edema of lower extremities, cough, dyspnea, dilated heart, low blood pressure and weakened pulse. Following ligation of the subclavian artery in its first and third portions, and the subclavian internal jugular and left innominate veins, and excision of the included sections of these vessels together with the fistula, the signs of broken compensation have disappeared, the quality of the pulse has improved, and the blood pressure has risen to a more normal level. The patient has been able to resume her household duties. The heart, though well compensating, has sustained damage that will probably be permanent.

(To be continued)



## Current Medical Literature

### AMERICAN

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Titles marked with an asterisk (\*) are abstracted below

### Archives of Dermatology and Syphilology, Chicago

26: 783-960 (Nov.) 1932

- \*Arsphenamines as Factors in Production of Neurosyphilis P A O Leary and J R Rogin, Rochester, Minn.—p 783
- \*Fatalities Due to Bismuth in Treatment of Syphilis. H Beerman, Philadelphia.—p 797
- Grenz Rays Their Therapeutic Value in Dermatology M Scholtz, Los Angeles.—p 802
- Lichen Planus Bullosus Report of Case. D E H Cleveland Van couver B C Canada.—p 816
- \*Spinal Fluid in Syphilis II. Comparative Study of Five Hundred and Twenty Two Spinal Fluids by Complement Fixation and Microscopic Slide Precipitation Tests Preliminary Report. L Spiegel, J J Eller and C R Rein New York.—p 819
- Syphilitic Bursopathy of Verneuil Report of Case. N N Epstein and R Friedlander, San Francisco.—p 831
- Rhinophyma with Unusual Involvement of Chin W M Sams Ann Arbor Mich.—p 834
- Benign Epidermal Neoplasms. S W Becker Chicago.—p 838
- Acerodermatitis Chronica Atrophicans Preliminary Report. A M Davidson and P G Mar Winnipeg Canada.—p 849
- \*Multiple Benign Cystic Epithelioma (Epithelioma Adenoides Cysticum) Summary of Literature. F Summerill and J G Hutton Denver.—p 854
- Granuloma Fissuratum. R L Sutton, Kansas City Mo.—p 865
- Lymphogranuloma Inguinale Report of Three Cases from Chicago. L Antman and I Pilot, Chicago.—p 868
- Dermatitis Following Nerve Injury Ruth Herrick Grand Rapids Mich.—p 879
- Skin Metastases in Carcinoma of Bladder H C Rolnick and C P O'Neill, Chicago.—p 882

**Arsphenamine in Neurosyphilis**—O'Leary and Rogin studied 500 cases of neurosyphilis in an attempt to determine the influence of the modern treatment of syphilis on the production of neurosyphilis. In reviewing the literature they found many references to the relationship of modern treatment to this serious complication of the nervous system. They present an outline of the material of their study and an analysis of sex as a factor and history of early infection. Early in the infection, 72 per cent of the patients had not received treatment, 13 per cent had received only iodides or mercury in some form, 119 per cent had received inadequate treatment with one of the arsphenamines and mercury, and only 3 per cent had received what is now considered adequate treatment. The more serious type of involvement was much more common in the cases in which arsphenamine had not been given, as compared with cases in which inadequate or adequate arsphenamine treatment had been given. Of the fifteen patients who were adequately treated during the period of acute syphilis, 60 per cent manifested asymptomatic neurosyphilis. Adequate antisyphilitic treatment given after the diagnosis of neurosyphilis had been made proved efficient when its effects on the spinal fluid, blood and clinical symptoms are considered. This efficiency was equally manifest in cases in which previous treatment had not been given. That arsphenamine predisposes to, or induces the development of, neurosyphilis is not borne out by the author's study. In the 500 proved and unselected cases of neurosyphilis, arsphenamine had not been given in the early period of the infection in 85 per cent. The modern treatment of neurosyphilis is of pronounced value in reducing to a minimum the clinical serologic and spinal fluid manifestations of the disease.

**Bismuth Compounds in Treatment of Syphilis**—Beerman states that a survey of the literature on fatalities due to bismuth compounds in the treatment of syphilis reveals that intravenous injection is primarily responsible for sudden deaths and that the deaths are preceded by the symptoms of colloidal bismuth shock. The importance of pulling back on the plunger of the syringe to prevent intravascular injection into a deep

vein after the needle and syringe are in place before intramuscular injection is emphasized by the case of Chenoy. Delayed deaths due to bismuth intoxication are usually attributable to involvement of the gastro-intestinal tract, the liver or the kidneys, or a combination of two or more of these structures.

**Spinal Fluid in Syphilis**—According to Spiegel and his associates, the examination of 522 spinal fluids from 317 patients shows definitely that the microscopic slide precipitation test is much more sensitive than the complement fixation test. In treated patients, positive slide precipitation tests are much more persistent than complement fixation tests. The results of the protein and slide precipitation tests correlate closer than do either of them with the complement fixation tests, they are also much more consistent on repetition. For prognosis and therapy, the protein tests are especially helpful. Cases of neurosyphilis in which intensive treatment is employed are closer to a clinical cure when protein and slide precipitation tests become negative than when less sensitive tests are used. In examining the spinal fluid, no single test should be considered diagnostic unless confirmed by at least one other properly selected test, or by reexamination of the spinal fluid. To obtain the utmost in spinal fluid serologic diagnosis, the complement fixation and slide precipitation tests with the total protein and globulin determinations should be utilized.

**Multiple Benign Cystic Epithelioma**—Summerill and Hutton report the case of a white girl, aged 16, who showed small nodular tumor growths located on each side, well up on the temples to the scalp and down the posterior part of the cheeks to just below and posterior to the ears, on the back of the neck, one or two lesions lay within the margin of the scalp on each side, a few were on the extensor surface of the upper part of the arms, and across the uppermost part of the back, close to the neck, extending over both sides of the spine well toward the shoulders. From a study of their case and a review of the literature the authors conclude that multiple benign cystic epithelioma is a comparatively rare disease. It begins about the age of puberty or in infancy and as a rule affects females. Multiple benign cystic epithelioma has a symmetrical distribution usually on the face, but in addition affects the neck, thorax, upper part of the upper extremities and rarely the lower extremities. It is often hereditary, affecting two generations in succession but rarely passing to the third. It originates as an outgrowth from the basal cells of the squamous epithelium or the hair follicles. This benign growth of basal epithelium does not undergo a transition into basal epithelioma, which may at times resemble it in early clinical appearance. Multiple benign cystic epithelioma is a disease that can be differentiated histologically from syringocystadenoma, adenoma sebaceum, cylindroma, and adenoma of the sweat glands.

### Colorado Medicine, Denver

29: 425-456 (Nov.) 1932

- Recent Progress in Medicine. M H Rees Denver.—p 428
- \*Undulant Fever in Colorado P J Connor and F J Maier Denver.—p 430
- Meningitis in Denver Statistical Summary of Five Year Period. B B Jaffa Denver.—p 434
- \*Gonorrhea in Women C W Dorsey, Denver.—p 436

**Undulant Fever in Colorado**—On the basis of a series of fourteen cases of undulant fever in which all the clinical types of the disease as described by Hughes were present, including one malignant case, in which a woman with a history of repeated abortions died following her last abortion Connor and Maier conclude that undulant fever is a widespread disease, found where searched for, and that it occurs in Colorado, particularly in Denver, more often than is generally suspected. *Brucella suis* is the cause of the more severe types of undulant fever. *Brucella suis* is transmitted from the swine to the cow to the human being. Death from it occurs. Necropsy shows nothing more definite than a septic condition. The authors began treatment with a small dose of autogenous vaccine and increased the dose daily as the patient would tolerate it. If too large a dose was given, the patient reacted adversely and the symptoms became worse. In one case they gave as high as 15 cc. of autogenous vaccine at a dose. The usual maximum dose was 1 cc. The general treatment was symptomatic—codeine, acetylsalicylic acid, and so on for pain sedatives and hygienics, and hydrotherapy for delirium.



**Gonorrhea in Women**—Dorsey gives the various treatments for gonorrhea in women that he found in a review of the literature. In dealing with chronic urethritis, the author feels it helpful to change the drug used for irrigations about once each month and to give bladder instillations of 1 ounce (30 cc) of a 10 per cent solution of mild silver protein once or twice a week. He alternates between acriflavine hydrochloride, 0.5 per cent, and pyridium, 1:8,000, in the urethral irrigations. In this manner the discharge seems to be controlled more rapidly than when just one agent is used consistently, possibly because the organisms develop a tolerance to a certain drug after a period of time. The author concludes that there has been no specific cure found for gonorrhea in women, but definite advances have been made in the treatment of the disease, especially from the point of view of prevention of complications during or following the acute stage. There is a growing tendency to be less radical and mutilating in the surgical procedures employed. In spite of the interest manifest in this disease, and regardless of all the preventive measures that have been attempted, as long as human life persists the incidence of the infection will probably change little if at all, and one's efforts must be directed toward more rapid and certain methods of definite cure.

### Maine Medical Journal, Portland

23 217-240 (Nov.) 1932

- Some Clinical Considerations of Disease of Biliary Tract. F. H. Jackson, Houlton—p. 218  
Use of Roentgen Ray Examination in Obstetrics. T. E. Makepeace, Farmington—p. 221  
The Anemias: Their Diagnosis and Treatment. I. Olef, Boston—p. 224

### New Jersey Medical Society Journal, Orange

29 811-892 (Nov.) 1932

- A School Health Program for the Physician. A. G. Ireland, Trenton—p. 811  
Responsibility of County Medical Society to the School and School Physician. S. T. Snedecor, Hackensack—p. 822  
The Common Cold in the School. Julia C. Mutchler, Dover—p. 824  
Modern Thyroid Considerations. L. E. Myatt, Bridgeton—p. 829  
Treatment of Simple Fractures. J. S. Irvin, Atlantic City—p. 831  
Treatment of Compound Fractures by Closed Cast Method. I. E. Deibert, Camden—p. 836  
The Private Physician in Community Health Program. L. A. Wilkes, New York—p. 839  
Value of Antitoxin Serum in Treatment of Pneumonia. C. V. Craster, Newark—p. 849  
Safe Method of Cataract Extraction. Report of Results in One Hundred Operations. J. S. Shipman, Camden—p. 852  
New Method for Using Cane Sugar in Infant Feeding. Clinical Report. D. P. Evans, East Orange—p. 856  
Congenital Atresia of Upper End of Esophagus with Tracheo-Esophageal Fistula. Report of Case. G. S. Reitter, East Orange—p. 859  
Retrobulbar Neuritis Secondary to Posterior Ethmoid and Sphenoid Sinus Disease. J. A. Fisher and R. W. Baeseman, Asbury Park—p. 861

### New Orleans Medical and Surgical Journal

85 301-386 (Nov.) 1932

- Functions of County Public Health Department Laboratory. L. S. Lippincott, Vicksburg, Miss.—p. 301  
Control of Filth Borne Diseases in Mississippi, How and When. T. P. Haney, Jr., McComb, Miss.—p. 310  
High Frequency Arc Resection of Prostate. H. W. E. Walther, New Orleans—p. 318  
Diagnosis and Surgical Treatment of Duodenal Ulcer. R. L. Sanders, Memphis, Tenn.—p. 320  
\*Gunshot Wounds of Abdomen. R. W. Smith, Canton, Miss.—p. 327  
Treatment of Lesions of Cervix. V. B. Philpot, Houston, Miss.—p. 332  
Recent Nasal Fractures. C. A. McWilliams, Gulfport, Miss.—p. 336  
\*Carcinoma of Larynx with Laryngectomy Case. R. T. Smith, Natchez, Miss.—p. 339

**Gunshot Wounds of Abdomen**—Smith believes that every patient with a gunshot wound of the abdomen is entitled to the benefits that might be derived from operative intervention. Shock should be combated with the usual therapeutic medication, blood transfusion and, in the absence of a donor, dextrose intravenously. The author particularly stresses the importance of keeping the patient warm by the use of blankets, hot water bottles or electric pads. This should be maintained not only until the patient has reacted from the shock but also during the course of the operation. Obvious hemorrhage demands immediate operative control. When the patient has reacted from shock sufficiently to justify operative measures, the abdomen is opened through an incision long enough to permit thorough exploration. Injuries to the stomach and small intestine demand suture and, in the case of the small intestine,

a judicious use of the omentum. Large lacerating injuries may require resection. Injuries to the mesentery may be serious by cutting off the blood supply to a particular segment of intestine and may also require resection. Injuries to the colon, with resulting soiling of the peritoneum by its contents, usually result in a widespread fulminating peritonitis from which few patients survive. In perforation of the spleen with free hemorrhage, splenectomy should be performed. Hemorrhage from the liver often arrests itself spontaneously. Perforation of the pancreas demands free drainage, as the escape of pancreatic secretion into the abdominal cavity may cause necrosis of the abdominal contents. Drainage is indicated in all cases except possibly those in which the stomach is injured. Postoperatively it is important that the patient be placed in the Fowler position and be kept warm, and that fluids be given by proctoclysis, hypodermoclysis or intravenously. Blood transfusion should be done as needed. Morphine is administered in sufficient quantities to keep the patient comfortable. Enterostomy and hypertonic saline solution intravenously are indicated if there is evidence of obstruction.

**Carcinoma of Larynx**—Smith reports a case of carcinoma of the larynx in which laryngectomy was followed by the recovery of the patient. In his discussion of the subject the author includes diagnosis, pathology, laryngectomy and complications. He concludes that a most painstaking and careful history must be obtained. A thorough general and local examination must be made in order to select cases. In any intrinsic carcinoma of the larynx, total laryngectomy is the operation of choice. In early cases confined to one cord without fixation, laryngofissure may be done with success. Radium and high voltage roentgen therapy are contraindicated in malignant disease of the larynx. The patients should be strongly encouraged to depend on their esophageal voice in order to prevent depression psychoses.

### Oklahoma State Medical Assn. Journal, Muskogee

25 461-494 (Nov.) 1932

- Cerebellar Epidermoid (Cholesteatoma) Case. H. Jeter, Oklahoma City—p. 461  
Importance of Early Diagnosis in Tumor of Brain. H. Wilkins, Oklahoma City—p. 463  
Trigeminal Neuralgia. H. E. Hughes, Shawnee—p. 467  
Emotions in Medicine. Inferiority Complex. M. S. Gregory, Oklahoma City—p. 468  
\*Management of Abortions. J. B. Eskridge, Jr., Oklahoma City—p. 471  
Obstetric Problems Arising in Prenatal Period. R. E. Emanuel, Chickasha—p. 475  
Cancer of Uterus in Twenty Seven Year Old Para Two. Case Report. J. H. Robinson, Oklahoma City—p. 480  
\*Trichomonas Vaginalis Vaginitis. L. C. Northrup, Tulsa—p. 482

**Management of Abortions**—Eskridge states that all cases of threatened abortion should be considered septic. A digital examination in threatened abortion should not be made unless there is some question as to the diagnosis. Hemorrhage should be controlled by a firm packing in the vagina. Curettage should not be done until after the seventh day. All instrumentation before the seventh day should be the simple removal of decidual tissue from the vagina and cervical canal. In febrile cases, curettage should not be performed from three to five days after cessation of the fever. He concludes that sapremia and endometritis should be treated alike, as they are easily confused. Treatment consists of sedation, fluids as indicated, moist heat over the lower part of the abdomen, and removal of the decidua as indicated, the curet is contraindicated until at least seventy-two hours after the temperature has become normal. Parametritis should be treated symptomatically with supportive methods and by the use of hot rectal irrigations and moist heat over the lower part of the abdomen. Abscesses should not be opened until the patient has had about seventy-two hours to generate specific antibodies to the causative organism. Perimetritis with its associated conditions (culdesac abscess, peritonitis), is responsible for death in from 60 to 70 per cent of cases when present. The patient should be supported by transfusions or any supportive method that is indicated, should have hot packs applied over the abdomen, and should be closely observed. Localized collections of pus should not be drained until they have had ample time to localize. Septicemia requires the same treatment as any other septic case. This condition may also be mistaken for sapremia and may likewise be harmed by the use of the curet. Abortions after the third month are comparatively simple to

treat and should be handled as indicated by the causative factor. The curet is contraindicated in all cases after the formation of the placenta.

**Trichomonas Vaginalis Vaginitis**—During a period of twenty-six months, routine microscopic examination of fresh vaginal discharge taken from Northrup's 180 private patients revealed forty-two cases of trichomonas infection. The clinical diagnosis is based on characteristic observations, a scanty, thin, milky and somewhat frothy discharge with a disagreeable odor, and evidence of vaginal irritation in varying degrees of severity. Itching and soreness in the vagina which often extends into the pelvis is nearly always present. The vaginal membranes often bleed easily. Cervical erosions are common and will often heal spontaneously when the organisms are killed. The author found two cases in which Skene's ducts were infected and five cases associated with caruncles. In the laboratory diagnosis of *Trichomonas vaginalis*, a drop of fresh discharge is mixed with a drop of physiologic solution of sodium chloride on a cover glass. This is examined under the microscope as a hanging drop. If the organism is found, the patient will be benefited if active treatment is instituted to rid her of the infection. The author concludes that a routine examination for *Trichomonas vaginalis* should be made on all gynecologic patients. Thorough cleansing followed by the use of powdered sulphur is most effective. The use of lactic acid by the patient to restore the natural protective flora completes the treatment. Careful watching over a long period of time will prevent recurrences.

## Psychiatric Quarterly, Albany, N Y

G 581765 (Oct.) 1932

- Experimental Toxic Approach to Mental Diseases. Reaction of Brain Tissue to Subcutaneous Injection of Enterogenous Toxic Substances—Indole and Histamine. A. Ferraro and J. E. Kilman, New York. —p 581
- Skull Deformity Related to So-Called Acrocephalosyndactylia. Case. A. N. Bronfenbrenner, Thiells, N Y.—p 612
- Dimensions of the Living Heart in Schizophrenia. R. G. Reed, Central Islip, N Y.—p 617
- Method of Mounting Thin Sections of Brain for Museum Display. F. M. Kramer, New York.—p 623
- \*Personality and Catatonic Dementia Praecox. J. R. Blalock, New York. —p 625
- Prepsychotic Personality of Catatonic Schizophrenics. N. J. T. Bigelow, Utica, N Y.—p 642
- Use of Sodium Amytal, Sodium Rhodanate and Sodium Barbitol in the Control or Treatment of the Psychoses. N. D. Black, Anna A. Gronlund and W. R. Webster, Utica, N Y.—p 657
- Response of Cases of Hypermotility and Hypomotility to Bulbocapnine Injection. Preliminary Report. H. B. Lang and O. A. Kilpatrick, Utica, N Y.—p 666
- A Few Representative Cases of Pyromania. G. L. Warner, Utica, N Y.—p 675
- \*Three Years Observations of Intensive Sodium Bromide Therapy in Functional and Organic Psychoses. N. D. Black, Utica, N Y.—p 691
- Obstacles of Family Attitudes in Rehabilitation of State Hospital Patients. Mrs. Ethel B. Bellsmith, Central Islip, N Y.—p 697

**Personality and Catatonic Dementia Praecox.**—In a study of the prepsychotic personality of twenty-five males suffering from the catatonic form of dementia praecox, Blalock brings out the following points: 1. The intellectual and physical endowment seemed average. 2. The motor manifestations and output of energy were below that usually considered normal for childhood and early adolescence. 3. In their relations to the environment the majority were quiet, aloof, stubborn and easily offended and had a limited range of interests. 4. Almost invariably they were reticent, non-self-revealing and overconscientious and had few or no friends. A majority were passive and submissive. A partially or totally shut-in personality was present in 72 per cent. 5. The emotional reaction seemed to be somewhat inadequate. 6. In the majority of cases there was a lack of sexual adaptability.

**Use of Sodium Amytal, Sodium Thiocyanate (Rhodanate) and Sodium Barbitol in the Psychoses.**—Black and his associates have used and observed sodium bromide for nearly six years in the treatment of the psychoses. From their observations they feel that definite therapeutic results have been demonstrated, that is, the improved cases have been maintained at a higher level and are productive. In four cases of psychoses with epilepsy in which sodium thiocyanate was given, the reaction was as follows: the two deteriorated cases became somewhat more disturbed but seizures were not influenced; the two cases showed a well preserved personality, reacted

by showing severe increase in both psychotic manifestations and convulsive seizures. They consider this drug contraindicated in these individuals. The use of sodium amytal to induce and sodium barbitol to supplement prolonged sedation offers, they believe, a field for further investigation and from their experience offers a method of control in extremely extensible cases. Except for immediate effects, sodium amytal did not appear to have a better sedative value than the more prolonged use of sodium barbitol or sodium bromide. Sodium thiocyanate showed beneficial results in a few cases but it seemed to have a more limited field than the other drugs considered in their series. The authors hope that at a later date they may be able to show more concrete results.

**Intensive Sodium Bromide Therapy.**—From a three years' observation of intensive sodium bromide therapy in functional and organic psychoses, Black states that of the 129 patients treated, 97 showed varying degrees of improvement, 25 were unimproved and 7 died. Of the patients who died, the death of only one was thought to have been even indirectly associated with the treatment, this case having shown signs of bromide intoxication four days before the development of a fatal bronchopneumonia. Of the 129 cases treated, 50 showed a gain in weight, 79 showed a loss. Of 86 cases treated in a first series, a bromide rash developed in 10, and 4 of these required at least two courses of solution of potassium arsenite to relieve the condition. Subsequent observations of the total 129 cases treated showed that a rash developed in only 5, and these yielded to a single course of treatment. Many patients who had regressed to the vegetative level were sufficiently improved to become actively engaged in useful work. A number of the patients were extremely destructive, they became sufficiently improved so that they either did not exhibit this behavior or, if at all, only to a limited extent. In no case was it considered that bromide hastened the progress of mental deterioration. The greatest improvement was noted in the patients who had regressive psychoses and so-called conduct disorders. Under careful supervision, bromide is a safe form of treatment.

## Public Health Reports, Washington, D C

47 2191 2216 (Nov 18) 1932

- Epidemiologic Study of Plague in Peru, with Observations on Anti-plague Campaign and Laboratory Work. C. R. Eskey.—p 2191

## Southern Surgeon, Atlanta, Ga.

1 173 264 (Oct.) 1932

- Present Status of Surgery of Gallbladder. R. L. Sanders, Memphis, Tenn.—p 173
- \*Surgical Considerations in Undulant Fever. W. M. Simpson, Dayton, Ohio.—p 184
- Observations Drawn from Two Thousand Eight Hundred and Thirteen Thyroidectomized Patients, with Especial Reference to Hyperthyroidism and Hypothyroidism. A. G. Brenizer, Charlotte, N C.—p 193
- Fractures of Upper End of Tibia Involving Articular Surfaces. T. P. Goodwyn, Atlanta, Ga.—p 209
- \*Cancer of Larynx. Its Treatment by Laryngofissure. C. Jackson, Philadelphia.—p 223
- \*Vaginal Ureterolithotomy. D. B. Cobb, Goldsboro, N C.—p 230
- Is Prostatic Hypertrophy Preventable? J. F. McCarthy, New York.—p 242
- \*Diagnosis and Treatment of Carcinoma of Rectum and Rectosigmoid. F. W. Rankin, Rochester, Minn.—p 247

**Undulant Fever.**—Simpson states that undulant fever has rapidly evolved from the obscurity of a clinical curiosity to the prominence of an important public health problem. Approximately 3,000 cases have been recognized in this country during the past two years. In and about Dayton, Ohio, 132 cases of undulant fever have been discovered during the past three years. The fact that the largest number of cases have been found in those states in which certain investigators have concentrated their efforts on this disease would seem to indicate that the disease is probably passing unrecognized in many other parts of the country. Undulant fever possesses important surgical aspects, chiefly because of the ease with which it may be confused with appendicitis and cholecystitis in certain cases. In view of the predilection of the organism for the genital tract, it bears an etiologic relationship to certain cases of abortion, tubo-ovarian abscess, seminal vesiculitis, prostatitis, epididymitis and orchitis. The joint manifestations of the disease make it a diagnostic problem for the orthopedic surgeon. The clinical manifestations of the disease are usually sufficiently characteristic to enable the physician to arrive at

an initial diagnosis of undulant fever. The two important sources of infection for man are the ingestion of raw milk or unpasteurized dairy products containing *Brucella*, or direct contact with infected fresh animal tissues. The transmission of milk-borne infection to human beings may be eliminated by pasteurization of milk and dairy products. Many observers have reported favorable results with specific vaccine therapy. The author utilized this form of treatment in sixty cases with results that appear to justify its use.

**Cancer of Larynx**—Jackson believes that in early intrinsic cases of cancer of the larynx at least 80 per cent of relative cures can be obtained by the comparatively minor and non-mutilating operation of laryngofissure. To obtain such statistical results the operation must be strictly limited to the class of cases mentioned and the disease must be recognized early. Early diagnosis depends on the recognition by the public of the general principle that continuous or intermittent hoarseness should be regarded as malignant until examination of the larynx by the physician has proved it benign. Direct laryngoscopy is indicated in every patient with hoarseness if the anterior commissure cannot be seen with the mirror.

**Vaginal Ureterolithotomy**—On a basis of his personal experience with four vaginal ureterolithotomies and from a study of all available case reports in the literature, Cobb draws the following conclusions: 1 Vaginal ureterolithotomy is a comparatively simple method of removing a stone from the lower ureter, a location that makes other methods difficult. 2 It should be reserved for those cases in which stones are readily palpable on vaginal examination and in which there is sufficient vaginal relaxation to assure adequate exposure. 3 It affords dependent drainage, should urinary leakage occur. 4 The possibility of a permanent ureterovaginal fistula seems to have been exaggerated. 5 An external incision with the attendant possibility of hernia is avoided. 6 The period of convalescence is shortened.

**Carcinoma of Rectum and Rectosigmoid**—Rankin states that the diagnosis of carcinoma of the rectum will be made accurately in practically all cases if careful digital examination or digital and proctoscopic examination is made. The author gives what in his experience are the most important symptoms of carcinoma of the rectum, in the order of their importance: (1) change in intestinal habit, (2) bleeding and (3) pain. To explain change in intestinal habit is not a simple matter, for, in the first place, a normal intestinal habit is not uniform to all people, and, in the second place, it is difficult to elicit on direct examination of patients a history of changes in their habits. He believes that alternating periods of diarrhea and constipation are perhaps the changes noted most frequently. Bleeding, as a chief complaint or as an associated symptom, was noted by Buie in 84 per cent in a statistical study of 1,937 cases, whereas pain, in one or the other of these capacities, was noted in 67.4 per cent. Obviously, bleeding cannot occur until the mucous membrane of the bowel has been invaded, nor can the length of time the symptoms have persisted be evaluated accurately because, unquestionably, the growth has been present in many instances for a long period before the patient's attention has been called to it. The author emphasizes the fact that blood, whether mixed with the stool or on it, is the most constant symptom of malignant disease of the lower part of the intestine and rectum. It is probably one of the earlier manifestations, and, as a premonitory symptom and warning signal, invariably should call for complete examination of the parts in an effort to rule out malignant conditions. The choice of methods of treatment of rectal and rectosigmoid carcinoma lies between radical surgery and radium, or a combination of the two. The author submits to radical operation all patients with carcinoma of the rectum and rectosigmoid in whom he believes the growth susceptible of extirpation. His choice of operation has been the graded, combined abdominoperineal resection in two stages. The first stage consists of exploration through an incision low in the median line, which permits inspection of the entire abdominal cavity and the decision as to whether or not the growth is removable. The growth is removed and a colonic stoma established and, after the wounds have healed, it is his custom to allow from one month to six weeks to elapse before the patient returns for the second operation. At the second stage the rectum, the rectosigmoid and part of the sigmoid are removed by combined abdomino-

perineal resection, which starts from behind. The rectum is mobilized up to the peritoneal fold and then encased in a rubber glove and thrust back into the pelvis and the wound is closed. He uses sacral anesthesia. Following this the patient is turned on his back, an incision is made in the median line, and the inferior mesenteric vessels are ligated close to their origin, after identification of both ureters has been made. The pelvic peritoneum is opened and the whole segment is lifted out through the abdominal wound. A new pelvic diaphragm is made and the wound is closed. Drainage is provided by putting in a small pack to control whatever oozing there may be. His experience with this type of operation in a large series of cases has proved satisfactory. In his first series he operated in twenty-three consecutive cases before a death occurred.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### Journal of Tropical Medicine and Hygiene, London

35 321 336 (Nov. 1) 1932

Etiology of Yaws. C. R. Steel.—p. 321

Malaria and Plasmoquine Prophylaxis in Railway Colony at Pandharpur (India). K. Lindberg.—p. 324

Schistosomiasis. N. P. Jewell.—p. 326

35 337 352 (Nov. 15) 1932

Cystitis Due to Bacilli of Metadysentery Group (B. Ceylonensis A, B, Ceylonensis B, B. Madampensis). A. Castellani and M. Douglas.—p. 337

Notes on Mosquito Borne Diseases in Southern Nigeria. IV. Sex Ratio of House Haunting Mosquitoes. D. Anderson.—p. 340

Congenital Hypertrophy of the Right Hand. Case. K. F. McMurtrie.—p. 343

### Lancet, London

2 1091 1144 (Nov. 19) 1932

Hematuria. A. Fullerton.—p. 1091

\*Tropical Ulcers. A. Quick and Successful Method of Treatment by Excision and Skin Graft. C. James.—p. 1095

\*Adrenal Neuroblastoma. Case with Metastases Causing Blindness. F. W. Law.—p. 1101

Notes on Hypnotic States. A. Cannon.—p. 1103

Three Fatal Cases of Pulmonary Embolism in Relation to Pregnancy. J. Beattie.—p. 1105

**Tropical Ulcers**—James found a surprisingly successful method of treatment in excision and skin graft, seeds being the surest method of graft and the easiest of application. In suitable cases, Thiersch grafts can be combined with seeds. The results of his method in forty-five cases were completely successful in 91 per cent, partially successful in 7 per cent and unsuccessful in 2 per cent. The average time taken for complete epithelization of the area was thirteen days. The author's method of treatment is as follows: Thirty minutes before the spinal anesthetic the patient is given  $\frac{1}{2}$  grain (0.03 Gm.) of ephedrine by mouth and, if nervous, an injection of  $\frac{1}{4}$  grain (0.01 Gm.) of morphine sulphate,  $\frac{1}{100}$  grain (0.00065 Gm.) of scopolamine hydrobromide and  $\frac{1}{100}$  grain (0.00065 Gm.) of atropine sulphate. The former in the author's later cases has been prophylactic against headache following the procaine hydrochloride. In the operating room the patient is given intraspinally 1 cc. of a 10 per cent solution of procaine hydrochloride in physiologic solution of sodium chloride. The ulcer is rubbed with tincture of iodine and the surrounding skin is painted with iodine posteriorly and laterally as well as round the ulcer. With a scalpel and toothed forceps a "slice" which includes the ulcer is excised from the leg. The edema underneath an acute ulcer usually allows it to be excised easily without going deeper than the superficial fascia. When the ulcer is chronic, and the scar, fascia and periosteum are just one tough layer, the excision, which takes away much of this scar tissue, goes deeply enough not to touch the bone but removes the entire ulcer. Should the base of the ulcer be accidentally penetrated by the knife, it is necessary to reexcise the whole area, removing a thin slice all over and using another scalpel. With seed grafts, absolute hemostasis is not necessary. The sterile towel covering the prepared skin area is removed and a darning needle with a sharp point is jabbed gently into the skin. A "tent" of epidermis is lifted. A razor blade fixed in a pair of Kocher's forceps incises this tent by cutting just below the needle. This small seed is placed on the new ulcer bed, more seeds being removed until the ulcer

is covered. The closer together the grafts are applied, the shorter is the time of healing. The optimum is the depth of a Thiersch graft. So long as the area from which the seed has been taken is gray and points of hemorrhage appear—though minute areas of yellow fat are frequently visible—and the raw area of the seed is not yellow, the seed will be suitable. The graft is carefully covered by paraffin wax gauze, sterilized by steeping in compound solution of cresol for thirty minutes. With a swab dampened in saline solution, the seeds are gently but firmly pressed on the base, any blood is soaked up, and dry gauze is applied over the wax gauze. Absorbent cotton is shaped so as to fit accurately over the graft, giving equal pressure. Over this is placed a layer of cotton well soaked in equal parts of glycerin and red lotion, which soaks the cotton pad. (Red lotion is zinc sulphate, 0.45 Gm, in compound tincture of lavender, 208 cc, and distilled water to 100 cc.) More cotton is applied and a bandage is bound gently but firmly over all. The same dressing is applied to the denuded area, and the patient is returned to bed. When an ulcer is situated over the malleoli or anterior to the ankle joint, plaster is advisable, a window being cut out at the first dressing two days after operation. On the second day the dressing is removed down to the wax gauze by soaking it in glycerin lotion. If there is no sign of sepsis, a fresh dressing is applied and the ulcer left for a further three days, or longer. The wax gauze can be removed after a week. If there is the slightest sign of sepsis, the wax gauze is removed and the graft is dressed with eusol covered with a protective dressing. The patient is allowed up when the area is dry and completely epithelialized. The graft can be covered with petrolatum or hydrous wool fat and a bandage worn till the skin is strong.

**Suprarenal Neuroblastoma.**—Law reports a case of suprarenal neuroblastoma with metastases causing blindness in a boy, aged 11 months, in whom the distribution of the secondary deposits was by no means typical, for instance, none were found in the lumbar glands, and there was evidence of only one in the cranial bones. The subdural deposits were unusual, though the case presented the common symptom of blindness, this came about in an entirely unusual and theretofore unrecorded manner and there was never any proptosis, papilledema or optic atrophy, such as is almost invariably present in these cases. Diagnosis was extremely difficult and was never definitely made, at one time that of leukemia was considered, though no fundus change of any kind was present. The secondary anemia was typical, but there was also a definite lymphocytosis, which has not been remarked before. The author gives no explanation as to the nature of the subcutaneous nodules but states that it is possible that these were really atypical secondary deposits of which the cellular elements had degenerated.

### Medical Journal of Australia, Sydney

2 589 616 (Nov. 12) 1932

- \*Myxedema. E. H. Stokes—p. 589  
Hydatid Mole and Chorionepithelioma. New Method of Diagnosis and Prognosis. B. Mayes—p. 603

**Myxedema.**—Stokes reports briefly on ten patients with classic and six with incomplete myxedema. He discusses the etiology, pathology, clinical features, diagnosis, prognosis and treatment as it pertains to myxedema. He concludes that the importance of its recognition lies in the fact that it is one of the diseases for which there is a specific remedy. The essential part of treatment is the use of thyroid substance. The therapeutic use of thyroid substance may conclude the diagnosis. It is therefore necessary to employ a thyroid preparation of known potency. Owing to the earlier use of fresh thyroid it was the custom to standardize the dried substance in terms of the fresh gland. 1 grain of the dried gland equals 1/5 of the fresh gland. On account of the varying composition of the thyroid obtained from sheep at different seasons of the year and from different pastures it was found necessary to abandon the standardization in terms of the fresh gland. The treatment consists of two stages: the objective of the first stage being to remove the manifestations of the disease and of the second to maintain the patient in health. The second stage must be continued throughout the life of the patient. It is both wise and necessary to continue to bed patients suffering from cardiovascular complications during the first stage of treatment. As patients suffering from myxedema are sensitive

to thyroid medication, it is best to start with a small dose. The proper dose is controlled by the clinical response of the patient, the basal metabolism, the resting pulse rate and the body weight. One may add that the cholesterol content of the blood serum is also a valuable guide as to dosage. While an initial determination of the basal metabolic rate and an initial estimation of the blood serum cholesterol are almost essential, the repeated use of these laboratory methods of investigation is not indispensable in following the progress of the treatment. The general condition of the patient and the resting pulse rate are most valuable guides. When myxedema is associated with cardiovascular degeneration complicated by a severe grade of anemia, the raising of the metabolism by thyroid substance is apt to cause an excessive increase in the pulse rate, as each unit of blood contains less oxygen than normal. Attention should be paid to the elimination of gross focal sepsis, and a mixed diet of adequate iodine content, consisting of an abundance of milk, fish, cereals, fruit and vegetables, and a small amount of meat, should be advised. Foods rich in cholesterol, such as brains, ham, bacon, egg yolk and cream, should be restricted. Thyroxine is recommended by some authorities instead of thyroid substance. Plummer and Boothby found that 1 mg of thyroxine injected intravenously caused a rise of 28 per cent in the basal metabolic rate. The patient is restored to normal health within a few weeks.

2 617 646 (Nov. 19) 1932

- \*Antenatal Treatment of Breech Presentations. H. C. E. Donovan—p. 617  
Management of Breech Delivery. P. L. Hipsley—p. 621  
Distribution of Radiation Intensity Around Different Forms of Radium Applicators. W. H. Love—p. 624  
\*Aschheim-Zondek and Other Laboratory Tests for Pregnancy. G. V. Rudd and W. W. Ingram—p. 629

**Breech Presentations.**—According to Donovan, the incidence of breech deliveries and the appalling stillbirth and neonatal death rate call for serious consideration. The maternal results are less favorable in breech presentations than in vertex deliveries, and there are increased risks of infection and a greater incidence of gross mechanical lesions, causing more or less chronic invalidism and necessitating surgical operations at a later date. Skilled delivery is capable of greatly reducing the bad results for both child and mother, but the necessary skill to obtain such good results can be obtained only at the cost of a high mortality. The results obtained by external version performed at the appropriate time improve the statistics to a great extent, and external version should be attempted in all cases. Among ninety-one cases in which version was attempted, it was successful in thirty-eight of forty-seven primiparas and forty-two of forty-four multiparas. Seventy-six of the babies from the eighty successful versions left the hospital alive and well, and four were still-born, a fetal mortality of 5 per cent. In three of the eleven cases in which version failed and in which delivery was by the breech, three babies died at or soon after birth. In one of the successful cases, movements ceased immediately after version and the mother was delivered of a macerated fetus a fortnight later. In this case the death of the fetus can be ascribed to version. In no case was there prolapse of the cord or limbs. One mother in this group died of sepsis. During the same period, in 100 consecutive breech deliveries there were 19 stillbirths and 12 neonatal deaths, a total fetal mortality of 31 per cent. Cesarean section has a small but definite place in the treatment of breech presentations. It is unfortunate that the frank breech presentations that cause most of the failures in turning are those that cause great difficulties and dangers during birth. It is among these that most of the justifiable cesarean sections fall.

**Pregnancy Tests.**—Rudd and Ingram state that in the 145 cases in which the Aschheim-Zondek test was used, the results were correct in every instance. They propose a more rapid pregnancy test, based on the Aschheim-Zondek technique. The time taken by the test is from fifty-five to seventy hours. Their test is as follows: The early morning specimen of urine slightly acid to litmus, is mixed with three volumes of absolute alcohol and allowed to stand for thirty minutes. The mixture is centrifuged and the supernatant fluid is poured off. The precipitate is taken up in a small volume of water and the mixture is again centrifuged. The aqueous extract is found to be highly active. The precipitate may be spun down in a 100 cc. centrifuge tube in three spins, the super-

natant fluid being discarded each time. The supernatant fluid is decanted off and the tube drained for a few minutes, or, if the precipitate is bulky, the tube is placed in a water bath at 40 C and exhausted for a few minutes in order to remove most of the alcohol. The precipitate is taken up with 15 cc of distilled water and transferred to a 10 cc centrifuge tube. The large centrifuge tube is washed out with three quantities of 0.7 cc of distilled water and the washings added to the 10 cc centrifuge tube. After thorough mixing, the insoluble portion is centrifugated out. The concentration effected by the procedure is about 15 to 1. After preliminary tests with the concentrates prepared in this manner, the preparation of the concentrate from urine was commenced in the morning. Four mice, from 28 to 30 days old, received two injections of from 0.3 to 0.4 cc at an interval of six hours. Fifty-five hours after the first injection, the ovaries of two of the mice were examined. If hemorrhagic follicles were not seen, the remaining mice were examined about seventy hours after the first injection. The finding of one hemorrhagic follicle constitutes a positive reaction. In the absence of hemorrhagic follicles, the result of the test is "negative." The authors employed their test with sixty-five specimens of the urine of pregnancy. All but six reacted positively at fifty-five hours. Of the six, five reacted positively at from sixty-eight to seventy hours. The one that failed to give a positive reaction either at fifty-five or seventy hours was a very dilute specimen of urine passed during the afternoon and was almost colorless. The authors also gave two intravenous injections of 10 cc of urine at an interval of six hours to fourteen rabbits. Forty-five hours after the first injection, the animals were killed and their ovaries were examined. The ten that had been injected with the urine of pregnancy all had hemorrhagic follicles in the ovaries. The remaining four, which received injections of urine from nonpregnant women, had no hemorrhagic follicles. In those instances in which the test is urgent, the rabbits' ovaries could be examined in twenty-four hours and a positive result would then end the test.

### Annales de Dermatologie et de Syphiligraphie, Paris

3 977-1072 (Nov.) 1932

- Exotic Syphilis Pathogenesis and Therapy A. Sezary—p. 977  
 \*Histocytoma of Skin F. Wöringer and S. Kwiakowski—p. 998  
 Flocculation Reactions M. L. Chevrel Bodin and M. Cormier—p. 1011  
 Venereal Echinosis "A Vacuo" of Mucosa R. Barthelemy—p. 1021

**Histocytoma of Skin**—Under the name of histocytoma, Wöringer and Kwiakowski describe certain small benign tumors of the reticulo-endothelium occurring in the dermis of the extremities, rarely of the trunk, of healthy adults. They are usually single, but sometimes from two to five appear. They grow slowly and attain the size of a cherry pit, rarely that of a nut. The small tumors do not rise above the surrounding surface. On palpation they feel hard and well circumscribed. The large ones may protrude above the surrounding surface and also develop down into the subcutaneous layers but are never adherent there. The skin over the tumor exhibits a rose-bister color. The tumors have a collagenous stroma but consist mostly of cellular elements. The cells are generally fusiform and they may be infiltrated with fat and particularly with cholesterol. The lipid infiltration varies in different parts of the tumor and from one cell to another. It is the presence of these cells charged with fat which differentiates the histocytoma from the flattened fibroma, which it resembles histologically as well as clinically. Histocytomas also resemble xanthomas, but the latter are characterized by an abundance of large foam cells, whereas in the former the true foam cells are rare and the cells generally retain their fusiform aspect.

### Archives de Médecine des Enfants, Paris

35 697-771 (Dec.) 1932

- \*Pulmonary Abscesses in Children J. Hutinel, R. Kourilsky and E. Nicolas—p. 697

**Pulmonary Abscesses in Children**—Hutinel and his associates state that pulmonary abscesses in children are usually acute, monomicrobic and nonfetid, but subacute putrid abscesses may be encountered. They are usually primary but may occur secondarily to a rhinopharyngeal infection or to trauma from a foreign body. The first stage is that of an acute pneumopathy. There is a peripheral inflammatory reaction surrounding the

central focus which is going to suppurate. This focus evolves toward simple suppuration (acute abscess) or toward localized necrosis, followed by suppuration (fetid abscess). The second phase consists in bronchial evacuation of the abscess, starting about the tenth day in acute abscess and earlier in fetid abscess. The pus is discharged during an attack of coughing. Simple acute abscesses usually heal spontaneously, but putrid abscesses usually develop into chronic diffuse suppuration. The essential elements of positive diagnosis are the appearance of a purulent elimination by the respiratory passages during an acute or subacute bronchopneumonic attack and a roentgenographic image of a circumscribed hydro-aeric cavity of oval form with vertical axis and without connection with the thoracic wall. In children the purulent discharge must sometimes be looked for in the vomit. The roentgenographic image may appear simply as a darker spot in an area of condensation or, exceptionally, may be lacking. The impossibility of injecting iodized poppy-seed oil into the suppurating cavity by the tracheobronchial route is a valuable diagnostic sign. Pulmonary abscesses in children are most easily confused with encysted pleural suppurations, especially those in the posterior or subaxillary region of the pleural cavity. The hydro-aeric images of encysted pleurisies are, in general, larger than those of pulmonary abscesses, have a transverse development and are rarely at the height of the large fissure, but more often at the base. Injection of the iodized poppy-seed oil directly into the pleural cavity is of diagnostic value in suppurations of the base of the cavity. Encysted pleural cavities can be injected intrabronchially much easier than lung abscesses. Roentgenography with intratracheal injection of iodized poppy-seed oil is also the method for differentiation between lung abscesses and bronchial suppurations. Because of the frequency of spontaneous cure of lung abscesses, treatment should be chiefly expectant. In addition to the usual measures taken in beginning acute bronchopulmonary infections, emetine hydrochloride may be injected subcutaneously in doses of from 0.01 to 0.03 Gm. Specific vaccine therapy may also be employed. Surgical intervention should not be undertaken unless cure is retarded beyond two months. When this happens, as in the rare cases of putrid abscess, pneumotomy in two stages should be performed to avoid chronic evolution toward bronchiectasis and retractile pulmonary sclerosis.

### Diagnostica e Tecnica di Laboratorio, Naples

3 637-732 (Aug. 25) 1932

- Research on Function of Liver I. Galactose Tolerance Test in Hepatic Diseases P. de Lucia and M. Torella—p. 637  
 \*New Method for Microdetermination of Calcium in Blood G. Scotti—p. 657  
 Alleged Inhibitory Power of Peptone on Growth of Tubercle Bacilli G. Buonomini—p. 665  
 Method and Observations on Dosage of Urea with Apparatus of Van Slyke G. C. Torri—p. 669

**Microdetermination of Calcium in Blood**—Scotti reviews several methods and then advocates the following technic. Two cubic centimeters of blood plasma or blood serum is dried in a platinum capsule on a water bath and the residue incinerated. The ashes are dissolved in 0.5 cc of a normal solution of hydrochloric acid and the solution is poured in a centrifuge tube. The capsule is washed with bidistilled water which is also poured into the tube. The tube is placed in a boiling water bath, two drops of a 1:10,000 solution of methyl red are added to the solution, which is neutralized with three normal ammonia. This produces precipitation of ferric hydroxide and of calcium and magnesium phosphate. The solution is acidified again with lactic acid, added drop by drop, and is kept in the boiling water bath until the precipitate is almost dissolved. The iron passes in solution under the form of lactate, which is not precipitable. The precipitated phosphates are redissolved but cannot precipitate the calcium because of the acid reaction of the liquid. This acidity, however, does not disturb the precipitation of the calcium oxalate. Therefore, 0.5 cc of saturated solution of ammonium oxalate is added, all the calcium will be precipitated in the form of oxalate, as the previous treatment eliminated all the other elements that hinder its precipitation. The precipitate is allowed to settle for an hour and is filtered by pump through a microfilter with a bottom of porous glass. In the absence of a pump, the suction can be done by mouth through a pipet. The precipitated solution is washed with saturated solution of calcium oxalate. This



will avoid dissolving part of the precipitate which might be lost while the excess of ammonium oxalate not needed by the precipitation is removed. It is sufficient to wash with 5 cc. of the saturated solution of calcium oxalate five times. The precipitate is dissolved by 5 cc. of hot normal solution of sulphuric acid and the filter is then washed with 10 cc of bidistilled water. The filtrate is collected in a beaker previously washed with a solution of potassium permanganate and bidistilled water. The beaker is placed in a boiling water bath and a solution of hundredth normal potassium permanganate is added drop by drop from a graduated pipet. The quantity of the solution of hundredth normal potassium permanganate necessary to produce the reddish coloration in 5 cc of normal solution of sulphuric acid being known, this value is deducted from that obtained in the dosage of the oxalate, thus leaves the exact quantity of hundredth normal potassium permanganate used for the dosage. The results obtained with this method are more than satisfactory. The author found that the calcium in the blood of guinea-pigs, rabbits and rams contained, respectively, 0.06 Gm of calcium per liter (average of six determinations), 0.092 Gm. of calcium per liter (average of five determinations) and 0.13 Gm of calcium per liter (average of five determinations)

### Archiv für Verdauungs-Krankheiten, Berlin

52 337-482 (Nov.) 1932

- Chemical Investigations on Pathologic Hepatic Bile Modification by Carlsbad Water W. Nonnenbruch and P. Mahler—p 337  
 \*Value of Fish and Fish Roe in Diet. A. Bickel—p 361  
 \*Differential Diagnostic Significance of Viscerovisceral Reflexes in Abdomen A. Ohly—p 376  
 \*Investigations on Lability of Autonomic Nervous System of Patients Operated on for Gastric Ulcer F. Berner—p 400  
 Acidity Conditions of Stomach in Simple Gastric Ptois J. Vándorfy—p 405  
 Diverticulitis of Colon Berta Oschinsky—p 415  
 Gastritis Problem in Light of Modern Functional Tests of Stomach. W. Schemensky and J. Geling—p 427

**Fish and Fish Roe in Diet**—Bickel describes his studies on various kinds of fish roe (caviar). The chemical analysis shows that caviar has a high caloric value, for it is rich in protein and lecithin, and contains considerable amounts of fat. Physiologic investigations revealed that the protein of fish roe is well utilized in the intestine, that it stimulates the gastric secretion better and longer than meat, and that its content in growth vitamins is considerable. All these characteristics make the less expensive types of fish roe valuable in general nutrition and in the diet of certain patients, particularly in emaciation, during convalescence, in diabetes and during digestive disturbances with deficiency of gastric secretion. Its high nutritive value is of primary importance. The author reports his studies on the value of certain fish, particularly pike-perch. Chemical analysis showed that the meat of this fish is almost a pure protein food. The physiologic tests revealed its stimulating action on the gastric secretion, the good utilization of its protein in the intestine, and its high content in growth vitamins.

**Diagnostic Significance of Viscerovisceral Reflexes**—Ohly deplors that, as a result of the progress in roentgenoscopy, the study of the viscerovisceral reflexes has been somewhat neglected in recent years, but he emphasizes that, for the general practitioner who does not have the facilities of a modern clinic, a knowledge of the viscerovisceral reflexes is essential for the topographic diagnosis. The gastro-intestinal canal plays an important part in the viscerovisceral reflexes, not only because it is the largest abdominal organ but also because of its complicated innervation. According to the predominance of the parasympathetic or the sympathetic irritation and depending on the reactivity of the sympathetic nervous system of the individual patient, the effects of the viscerovisceral reflexes become manifest in hyperperistalsis or hypoperistalsis and in hyperkinesis or hypokinesis with spastic or atonic conditions. Viscerovisceral reflexes of the gastrointestinal tract can be produced by the biliary passages, the pancreas, the kidney with the urinary passages and the prostate. Central disorders, abdominal hernias, postoperative adhesions, disorders of the abdominal lymph nodes and, interchangeably the stomach and the intestine. The author discusses these various possibilities and illustrates them in case reports. In his conclusion he emphasizes once more that a knowledge of the viscerovisceral reflexes prevents many diagnostic errors. The so-called organ neurosis gains a new

aspect from the point of view of the viscerovisceral reflexes, because in many instances it will prove to be a secondary neurosis produced by a primary, frequently masked, disorder of another organ.

**Autonomic Nervous System of Patients Operated on for Gastric Ulcer**—In the course of roentgenologic examinations on patients who had been operated on for gastric ulcer, Berner observed that all those who asked medical aid on account of persisting or reappearing disorders showed changes indicative of gastritis or jejunitis on the relief of the mucous membrane. The ulcer had relapsed or a peptic jejunal ulcer had developed in a few cases. Since the most widely accepted theory of the pathogenesis of gastric ulcer assumes that disorders in the sympathetic nervous system play an important part in its development, the author thought it advisable to determine whether these patients showed lability of the sympathetic nervous system. This was done by watching for changes in the blood pressure, pulsation and respiratory frequency following intravenous administration of epinephrine, atropine and pilocarpine. It was found that seventeen out of twenty patients who had been operated on showed increased reactions (heterotonia). Clinical manifestations such as tachycardia, hot flashes, sweating, increased salivation or dryness in the mouth, and dermatographism were also taken into consideration, particularly in those cases in which the reaction of the blood pressure and the frequency of the pulse showed marginal values. The basal metabolism was also determined, in spite of the fact that none of these patients showed signs of thyrotoxicosis. In seventeen of twenty patients the basal metabolic rate was increased more than 10 per cent.

### Deutsche Zeitschrift für Chirurgie, Berlin

238: 129-264 (Dec. 14) 1932 Partial Index

- \*Coagulability and Thrombosis A. Fonio—p 129  
 Experimental Studies of Extension and Role of Rhythmic Extension W. Müller—p 173  
 \*Extirpation of Mandibular Nerve and of Otic Ganglion and Sectioning of Trunk of Trigeminal W. Braeucker—p 185  
 Alimentary Lipemia in Normal Stomach and Stomach That Has Been Operated on. C. H. Schröder—p 239  
 Contribution to Knowledge of Volvulus of the New Born. W. M. Kreiner—p 248  
 Congenital Lateral Inguinal Hernia. L. Drüner—p 261

**Coagulability and Thrombosis**—In Fonio's opinion, attempts at prevention of thrombosis should be directed primarily against the tendency to thrombus formation which is the result of changes in the endothelium of the veins, rather than against increased coagulability of the blood. Factors capable of inducing changes in the endothelium in postoperative cases are infection, exogenous or endogenous, and stasis of circulation. The author considers thyroxine the most valuable medicinal agent in the prophylaxis of thrombo-embolism because of its accelerating effect on the elimination and its prolonged effect in lowering blood coagulability. The tendency to slowing on the part of the circulation in postoperative cases should be combated by both local and general measures. Among the local measures are the position of the lower extremities and the early resumption of active movements. Among the general measures, the author insists on a preoperative period of cardiac therapy in cases in which a difficult or prolonged operation is anticipated, as well as in patients with circulatory disturbances. Measures directed against increased coagulability can be regarded as of only secondary importance because it is the result of endothelial changes, which in themselves constitute the essential cause of thrombosis.

**Operation for Trigeminal Neuralgia**—Braeucker states that the operation of extirpation of the entire gasserian ganglion, as advocated for the severe cases of trigeminal neuralgia has been replaced by less radical but equally effective procedures. These occupy less time, avoid many of the dangers of the former operation, and are limited in their effect to the particular area of sensory disturbance. Today, the operation of choice for real trigeminal neuralgia is a total or subtotal sectioning of the portio major or the trunk of the trigeminal nerve. The author describes his own method with anatomic and topographic indications, the important feature of which is the ease with which the danger of severing the branches of the facial nerve supplying the muscles of the eye and of the forehead is avoided. The cranial cavity is exposed by a lateral opening of not more than 3 cm. in diameter. In



the rarer cases of the so-called otic-mandibular neuralgia, in which the pain, in addition to the trigeminal paths, radiates also over the branches of the sympathetic central, the author, in place of extirpating the sensory root of the trigeminal, extirpates the mandibular branch of the trigeminal and the otic ganglion

### Klinische Wochenschrift, Berlin

11 1977 2016 (Nov 26) 1932

- Experimental Foundations of and Inferences from Regeneration Theory of Tumor Formation B Fischer Wasels—p 1977  
Experimental Production of Leukemia, Aleukemia, Myelosis, Lymphadenosis and Lymphosarcoma W Büngeler—p 1982  
\*Typical Chemical Change of Protein Bodies in Blood Plasma in Carcinoma P F Merzbach—p 1984  
Determination of Quantity of Blood by Means of Combination of Inhalation Method and Dyestuff Method in Normal Persons and in Polycythemia Rubra E Frank, L Auerbach and Erna Stanner—p 1985  
\*Hypophyseal Emaciation and Insulin H Lucke—p 1988  
Manganese Poisoning in Workers in Manganese Industry Doris Mosheim—p 1989  
Reticulocytes and Central Nervous Regulation of Blood R Ginzberg and L Heilmeyer—p 1991  
Action of Circulatory Hormone Produced in Pancreas on Blood Sugar in Diabetes Mellitus A W Elmer and M Scheps—p 1993  
Applicability of Roentgen Paper for Diagnosis of Tuberculosis J Weissfeiler—p 1995  
Action of Parathyroid Extract E Homann—p 1996  
Aggressin of Gonococci W Casper—p 1996  
New Substrate for Blood Examination for Detection of Malignant Tumors H J Fuchs—p 1997  
Therapy of Diabetic Coma F Bertram—p 1998  
Mortality Rate of German Physicians According to Specialties K Freudenberg—p 2001

**Change of Protein Bodies in Carcinoma**—Starting from the observation of an increased protein metabolism in tumors and from Kocher's statement that tumor tissues have an increased content in basic amino-acids, Merzbach, at the suggestion of Fischer-Wasels, investigated whether the anomalies in the protein metabolism of the tumor are reflected also in the composition of the protein bodies of the plasma. After it had been determined that only the content in amido-nitrogen shows deviations, namely, a considerable increase relative to the total nitrogen content, the author restricted himself to the study of the acid-amido-nitrogen, namely, nitrogen that, after twenty hours of hydrolysis with a 20 per cent hydrochloric acid solution, becomes separated from the protein sediment. He realizes that this unified chemical interpretation of the fraction has not yet been exactly proved, but he nevertheless reports his observations on seventeen persons without tumors and twelve patients with malignant tumors. He detected considerable fluctuations in the amido-nitrogen values in patients without tumors as well as in those with tumors, but, with the exception of one patient with carcinoma of the skin, the amido-nitrogen values of patients with malignant tumors were always higher than those without tumors. He found that whenever the amido-nitrogen values exceeded 8 per cent of the total nitrogen content malignant tumors existed.

**Hypophyseal Emaciation and Insulin**—Lucke points out that the insulin therapy of emaciation, which was first suggested by Falta, is not successful in all cases of emaciation and that it may have harmful effects. This is especially the case in forms of emaciation developing after severe infectious diseases, such as typhoid and a febrile puerperium. Extreme forms of emaciation may lead to hypophyseal cachexia. The necropsy in these cases may reveal embolic changes in the anterior lobe of the hypophysis, and for this reason the author thinks it advisable to try treatment with hypophyseal extracts, if an involvement of the hypophysis is likely in emaciation. This will not only help in the diagnosis but will also have therapeutic effects. The author reports the clinical history of a woman, aged 40, in whom administration of insulin was attempted to counteract progressive emaciation. Trembling, hot flashes and cold sweats made it necessary to interrupt the insulin therapy, but a great improvement was observed when a preparation of the anterior hypophysis was given. The author thinks that there can be no doubt that the trembling, hot flashes and cold sweats were symptoms of hypoglycemia, and he ascribes this to the low insulin tolerance of patients with hypophyseal emaciation. Further, he points out that the thought that the anterior hypophysis plays a part in the carbohydrate metabolism is borne out by the fact that acromegaly is frequently complicated by disturbances of the sugar metabolism.

### Zentralblatt für Gynäkologie, Leipzig

56 2993 3056 (Dec 10) 1932

- Diagnosis of Anterior Frontal Presentation from External Examination W Haupt—p 2994  
Bacterial Content of Copper Catgut and Iodized Catgut in Suture Line After Some Time G von Linden—p 2996  
Experimental Study of Hormones M Rodecrot—p 3004  
\*Prevention of Eclampsia F C Hilgenberg—p 3006  
\*Psychogenesis and Psychotherapy of Vomiting of Pregnancy K Platonow—p 3010  
Eclampsia Without Convulsions or Loss of Consciousness S Biro—p 3016  
Penetrating Injury of Gravid Uterus as Indication for Cesarean Section G Warschauer—p 3021  
Technic of Cesarean Section F Eisenberger—p 3024

**Prevention of Eclampsia**—Hilgenberg states that the reduction of incidence of eclampsia in the Marburg clinic is mainly due to the influence of the teachings of Zangemeister. This author in 1921 postulated that eclampsia is the final stage of a morbid process in pregnancy. The first manifestation of the disease is to be seen in the dropsy of a pregnant woman. This is followed by a nephropathy and, still later, by a pre-eclamptic state leading to eclamptic convulsions as the result of increased intracranial pressure. The state of dropsy is treated by rest, diet and the restriction of fluids. Nephropathies, especially if combined with high blood pressure, are treated by a salt-free diet and limitation of fluid intake to 200 cc daily. A patient in this stage, entering the clinic with labor pains, is delivered by forceps if the blood pressure is above 150 mm of mercury. The pre-eclamptic state, manifested by headache, vomiting, abdominal pain and disturbances of vision, is treated by withdrawal of all nourishment and of fluid for twenty-four hours. The high blood pressure is combated by venesection and, in severe cases, by lumbar puncture. If no improvement takes place with the conservative measures described, emptying of the uterus should be resorted to without much loss of time. Of the 4,117 pregnant women admitted to the clinic between 1925 and 1930 there were 133 cases of threatened eclampsia, an incidence of 3.2 per cent. Of these, eighty-nine presented signs of edema, thirty of nephropathy and fourteen of pre-eclamptic symptoms. Conservative treatment resulted in an incidence of 36 per cent of eclampsia, active treatment, in only 10 per cent. The author concludes that pre-eclamptic states with manifest symptoms are best treated radically, that is, by emptying the uterus.

**Psychic Origin and Psychotherapy of Emesis Gravidarum**—Platonow, on the basis of his experience in the treatment of cases of emesis and hyperemesis gravidarum, rejects Stekel's hypothesis that the symptom is necessarily of psychogenic origin. Stekel regards it as an anxiety neurosis in the sense of Freud, as a manifestation of a symbolic subconscious fear of the sexual act, or as a manifestation of a concealed repulsion against the child. The author treated sixty-two cases by simple suggestion in the waking state or under hypnosis and obtained a positive result in 80 per cent of the cases. Suggestion by means of a spoken word acted here as a conditioned reflex in the sense of Pavlov. The vomiting symptom is a somatic rather than a psychic manifestation of an auto-intoxication the cause of which has not been determined as yet. Since suggestion, a minor psychotherapeutic measure, is capable of influencing these cases, resort to psychoanalysis is not necessary in the opinion of the author.

### Hygiea, Stockholm

94 881 928 (Nov 30) 1932

- Self Holding Laparotomy Speculum S von Wachenfeldt—p 885  
\*Cutaneous Changes in Long Continued Local Anaphylaxia O Reuterwall—p 887

**Cutaneous Changes in Long Continued Local Anaphylaxia**—Reuterwall states that by injecting into the ear of rabbits certain optimal doses of chicken albumin, horse serum and goat serum and by changing the antigens at intervals, a long hyperkeratosis can be maintained, in some animals for eighteen months. The changes produced by these antigens consisted in falling of the hair, hyperkeratosis, hyperpigmentation, crust formation and atrophic skin. The same changes are found clinically and experimentally in the preliminary stages of cancer. In several rabbits, microscopic examination revealed a tendency to papilloma formation. If cancer can be produced by the application of an albumin antigen, the conditions leading to the origin of cancer may be more easily analyzed than when other known cancerigenic means are employed.

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## HYPERTENSION, OBESITY, VIRILISM AND PSEUDOHERMAPHRODITISM

AS CAUSED BY SUPRARENAL TUMORS

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Cortical suprarenal tumors are of unusual interest because of the changes in metabolism, the changes in distribution of hair, the hypertension, and the changes in the secondary sexual characteristics caused by them. In recent articles such changes have been ascribed to basophilic adenoma of the pituitary. If such observations are correct, and it seems they are, one is forced to the conclusion that similar or identical changes are caused by tumors of either of these glands. It must be borne in mind that the suprarenal is a compound gland and that the medulla plays no part in changes of the sexual organs. But tumors of the medulla do cause hypertension and brief consideration will be given to tumors of this type.

The symptoms of suprarenal cortical tumors are variable, depending on the sex, the time of onset, and the rapidity of the growth. Two syndromes have been described: (1) the obese type, occurring in female children and adults, (2) the herculean type, occurring in male children and adolescents. These two types are fairly characteristic of suprarenal cortical tumors. There are, however, many exceptions and two other types, which are seldom encountered. One is the emaciation type and the other is the Archard-Thiers type. In the first there is almost complete loss of subcutaneous fat without hypertrichosis and sex changes. In the Archard-Thiers type there is amenorrhea with obesity, hypertrichosis and diabetes. This type is not thought to be due entirely to dysfunction of the suprarenal but to pluriglandular disease in which the pituitary also plays an important part.

Before puberty, in the male, there is a striking growth of the body. The muscular development is more pronounced than the size of the individual would indicate. Ossification and dentition take place early. In one case the cranial sutures were closed at birth and in another dentition was complete at 6 years, except for the last molars. Hypertrichosis appears early on the pubis, face and body. The skin is usually rough and often there is hair similar to that seen at puberty. The external genitalia attain adult size. Premature puberty has been claimed, but most of the cases quoted were not proved suprarenal disease. If the tumor is benign or slow-growing malignant, the individuals become prematurely male and die young.

The two following cases are striking examples of malignant cortical tumors.

**Linser's case** A boy, aged 5 years 7 months, looked from 16 to 18. With the exception of the last molars, all the teeth had erupted. He exceeded most of the measurements of a normal boy of 16. The pubis was covered with hair. The penis when pendent was from 8 to 9 cm long, when erect, from 12 to 14 cm. The testicles were as large as pigeon's eggs. After death a malignant tumor of the left suprarenal was found.

**Adam's case** A boy, aged 14 years 9 months, complained of a lump in the abdomen. In view of his age, the boy presented a remarkable appearance of precocious development. As a child, nothing unusual was noted. Puberty set in at 10 years, from which time, although he increased little in height, he developed great muscular strength, excelled in athletic sports, and defeated all competitors. For two years his complexion had become plethoric and dusky, and during this period the growth of hair on his face had to be shaved daily. His appearance was that of a sturdy little man. At operation an inoperable tumor was found. At autopsy it was found to be a hypernephroma of the left suprarenal.

After puberty, no further change toward the male type is possible. It has been stated in most articles that the sex changes are always toward the adult male type. This is not true, as the following two cases, cited by Weber, illustrate.

**Case of Dr J P zum Busch** A man, aged 27, a cook, for the last two months had noticed slight enlargement of both mammae and could squeeze a few drops of milky fluid from the well developed nipple of each breast. He died and autopsy showed a hypernephroma of the left suprarenal cortex with multiple metastases to the lungs, ribs, mesenteric glands, and glands in the neck. Sections from one of the enlarged mammae showed glandular tissue resembling that of an ordinary active mamma in the female.

**Case of Bittorf-Mathias** A man, aged 26, who had suffered from dyspnea for eight months, for one year had had progressive enlargement of the mammae and a few months later the testes commenced to atrophy. Six months after onset he became impotent and in eight months a tumor of the left part of the abdomen was observed. Metastatic tumors developed in the liver, and signs of obstruction of the inferior vena cava were present. Autopsy disclosed a hypernephroma of the suprarenal cortex. Both mammae showed glandular tissue. The testes, small, showed evidence of spermatogenesis, but the interstitial cells were hardly developed.

Before puberty in the female, highly malignant tumors cause death before marked changes occur, but in cases of hyperplasia, some adenomas and slow-growing malignant tumors, the changes toward the adult male type are very marked. The children, as a rule, become fat, seldom is there unusual muscular development. Hair appears early on the pubis and occasionally on the face. The skin becomes red, coarse and dry. Acne has been described frequently. The voice becomes

coarse and ugly. Laryngoscopic examination has proved that the vocal cords are enlarged. Ossification of the epiphysis and almost complete dentition have been observed. Some of the patients were mentally dull, but most were alert.

The changes in the external genitalia are most unusual. The clitoris assumes the size of a penis. The labia majora enlarge and are covered with hair. The internal genital organs have been described as smaller than normal. Menstruation does not begin when the age of puberty is reached. There are two striking exceptions: one girl menstruated at ten, and another at two and a half years.

After puberty, as before, the amount of change depends on the duration of the disease. Usually the first symptom is cessation of menstruation. This, without apparent cause, stops and does not begin again unless the person is cured by operation. About the same time there is loss of sexual desire and of the normal feminine modesty. As the disease advances, the individual may be attracted by ones of the same sex. Holmes said, "She had been, before menses ceased, fond of boys, but after this she lost all interest in the opposite sex and showed preference for society of women." After operation, "she was now again fond of men." It has been noted in other cases that women had been attracted by their own sex, when before the onset of the disease they had not been.

Abnormal growth of hair, or hirsutism, appears shortly after cessation of menstruation. The transverse pubescence begins to be transformed into the male type and at the same time hair begins to grow on the face. Later the legs, arms, abdomen, chest and back become covered with hair and that of the head becomes coarse and dry. The distribution of hair has been described as that occurring in the male, but it is more generally distributed and many times more profuse than that occurring on most males. After removal of the suprarenal tumor the hair on the trunk, arms and legs falls out and the feminine distribution is reestablished. In one case the hair of the head also fell out, but it grew back long and of the normal feminine variety. The loss of hair has occurred chiefly at the menstrual period.

The texture of the skin changes. It becomes red or brown and dry. Acne similar to that seen in boys at puberty has been noted frequently. Pigmentation, which differs from that of Addison's disease, has been described. Striae atrophicae appear on the abdomen, hips and thighs. In several cases large ulcers were present on the legs, and in others furunculosis on the back and limbs.

The voice becomes masculine and remains so even for a considerable time after successful removal of the tumor.

The changes in the secondary sexual organs are most striking. As in children, the clitoris greatly enlarges and may assume the size of an adult penis. The labia also enlarge, but not proportionately as much as the clitoris. After cure by operation these organs return to the normal size. The menses, as noted, cease and at the usual time for them to appear there are usually some of the symptoms accompanying the menopause. The uterus and ovaries have been described as small or atrophic, but after the removal of the tumor normal function has been resumed in a few months. It is hardly possible that atrophy had occurred, but only a cessation of function. There is always a diminution

in the size of the breasts, but these regain their normal size after cure by operation. After the menopause there is no change of any kind.

So marked may be the change in secondary sexual characteristics that the true sex may be mistaken. This is particularly true when the disease started in infancy. Crecchio described a peculiar instance in a pseudo-hemaphrodite.

The individual was baptized as a girl but brought up as a boy. As a man he contracted gonorrhea twice and died at the age of 40. The breasts and nipples were small, the chest was hairy. The penis was 6 cm long, the scrotum, absent. At autopsy, the uterus, tubes, ligamenta lata and ovaries were found, and with the exception of the last (which were small) they were normal. No corpora lutea were seen. The suprarenals were the seat of extreme hypertrophy.

Such changes taking place after birth have led to the belief that congenital pseudohermaphroditism in the female is due to abnormal hypersecretion of the cortex during embryonic life. All degrees of such anomalies are found, from only slight enlargement of the clitoris to enormous enlargement of the clitoris accompanied by atresia or total absence of the vagina. The internal genital organs are usually small and sometimes greatly deformed. Such deformities do not increase nor is there a change toward the normal. It would seem that if such defects were the result of hypersecretion of the suprarenal cortex it was rather early in embryonic life and that the suprarenal had ceased to exercise such abnormal control. With the exception of cortical tumors I have seen no report of abnormalities of the suprarenals that might have been responsible for the condition. Removal of one suprarenal has failed to have any beneficial effect.

Obesity is one of the most striking symptoms. The distribution of fat is on the abdomen, chest, buttocks and hips. There is little, if any, increase on the legs and arms, causing them to appear unusually small. The face is full and unsightly, owing to deposits of fat in the cheeks, under the chin and in the neck.

In contrast to the obese type, occasionally one has extreme emaciation with loss of practically all the fat. It would seem that this is due to destruction of suprarenal tissue, as the other symptoms are not so pronounced or are absent altogether.

Of particular interest is hypertension. This has been observed in many of the patients. It is not usually of the paroxysmal type but the blood pressure is constantly high. It, however, varies in wide ranges, rising 20 mm or more of mercury as a result of exercise, or falling as much under complete rest. The hands and feet are cold and clammy. There may be cyanosis and edema of the extremities and abdominal wall. The pulse rate, as the blood pressure, varies greatly, rising very rapidly during exercise and becoming rather slow under rest. Dyspnea is marked and in some cases cardiac hypertrophy and dilatation have been observed.

Pheochromocytomas also produce hypertension, but frequently of the paroxysmal type. The attacks are characterized by weakness, palpitation, shortness of breath and syncope, nausea, occasional vomiting, cold clammy extremities, choking and headache. Edema of the lungs with expectoration of frothy, blood-tinged sputum has occurred. The blood pressure has been observed as rising from normal to over 300. Death during the attacks has occurred, six deaths have followed simple operations, and chromaffin tumors of the suprarenals were found at autopsy. The attacks last a very short time and the normal state is quickly



rare and the general picture was that of an ovary after the menopause

In this case the tumor was so malignant that marked changes did not take place before death

#### OPERATION

When cortical tumors are to be removed it is necessary that the opposite suprarenal be explored and found to be normal. In 30 per cent of the reported cases the suprarenal opposite the one occupied by the tumor was absent or inadequate to support life. For this reason most surgeons prefer the transperitoneal route. Whether one uses the transperitoneal route or the lumbar route, it is necessary to make two incisions. The suprarenal vessels, particularly the veins, should be tied before any manipulation of the tumor is carried out. This will prevent metastases caused by detached tumor and at the same time prevent the large amount of suprarenal secretion from being suddenly squeezed into the circulation. Most of the fatalities occurred within a few hours after operation, from "shock." It is highly probable that this is a toxic effect resulting from the squeezing of large amounts of secretion into the blood stream, or a collapse following, such as is known to be the case following large injections of epinephrine. In cases of hyperplasia, either suprarenal can be removed. Owing to the close proximity of the right suprarenal to the vena cava, the left can be extirpated more easily.

#### RESULTS

All of the patients that had cortical hyperplasia and adenoma, excepting when congenital, recovered from the operation and also were cured of the disease with loss of abnormal distribution of hair and fat and recession of the clitoris to normal. In hypernephroma, 22 per cent completely recovered. Five and one-half per cent died later of metastases. In 11 per cent the tumor was found to be inoperable. Of the remaining patients, 39 per cent died soon after operation, of shock. Of the patients who recovered, 66 per cent had severe shock. It would seem that the results could be greatly improved by early operation and by employing methods to reduce the postoperative mortality.

#### COMMENT

Pheochromocytomas unquestionably cause paroxysmal hypertension by producing large amounts of epinephrine and suddenly releasing it into the blood stream. They sometimes produce a constant hypertension. Neither atrophy nor absence of the opposite suprarenal has been found associated with these tumors. Hypertension is also caused by cortical tumors with a return to the normal after removal of the tumor.

In pseudohemaphroditism of the congenital type, removal of one suprarenal, even when it was enlarged, has had no beneficial effect on the anomaly. Much can be done by plastic surgery and the individuals restored to something approaching normal. The sex should be determined and the anomaly corrected in accordance. The opposite has been done with poor results.

In pseudohemaphroditism of the acquired variety, removal of the tumor or of one suprarenal, in cases of hyperplasia, has been followed by very gratifying results with the return to the normal state or nearly so.

There are great variations in the type change and the degree. In boys the change is toward the adult. In girls and women the change is toward the adult male type. After puberty in males and after the menopause there is no change noted. The two cases cited are unusual exceptions. This would lead one

to believe that the sex changes were brought about by an indirect action of the suprarenal through the ovaries.

A review of the cases shows rather conclusively that the suprarenal opposite the tumor atrophies and is not congenitally absent. All degrees of atrophy from a slight beginning to total absence have been observed. This important point has not previously been noted. It is of the greatest importance, for removal of one suprarenal cannot ever be done with safety without determining the condition of the other.

518 Medical Arts Building

### PREVENTION OF CHILLS FOLLOWING TRANSFUSION OF CITRATED BLOOD

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Eighteen years ago, one of us (R. L.) suggested a simplified method of blood transfusion, namely, the citrate method. It can be stated without exaggeration that this method represents the simplest and easiest procedure. In fact, the great popularity that blood transfusion enjoys today is based on the introduction of the citrate method into the medical armamentarium.

With the popularization of this method, blood transfusion has been put within reach of every physician and surgeon. Blood transfusion up to that time had been confined to a small number of well equipped hospitals. The use of citrated blood has been rendered possible in small communities and its life-saving value made applicable to a large number of patients.

When this method was introduced, many objections were brought forward against its clinical efficacy. It was claimed that the vitality of the erythrocytes and leukocytes was impaired by the mixture of the blood with sodium citrate. Furthermore, many clinicians felt that the introduction of an anticoagulant was contraindicated in hemorrhagic diseases and other forms of blood dyscrasia. It was proved long ago<sup>1</sup> that these objections are purely theoretical. Citrated blood has the same clinical value as unmodified blood, not only in cases of shock and hemorrhage but in every form of blood disease. These points have been discussed in detail in previous papers. We are not concerned at present with these questions and shall not stop to discuss them. However, another clinical manifestation deserves important consideration, namely, the question of chills following the transfusion of citrated blood.

Unquestionably, a chill following a transfusion may be a serious complication. In many instances transfusions are given to patients who are very ill. In such a case, one should employ the method that produces the least number of chills. On this basis a careful clinician may prefer noncitrated blood.

There is abundant proof in the extensive literature on blood transfusion that the injection of unmixed blood is rarely followed by chills. On the other hand, we can refer to conclusive investigations by different authors that chills follow transfusions of noncitrated blood and

<sup>1</sup> Lewisoohn, Richard. Chills Following Transfusion of Blood, J. A. M. A. 80: 247 (Jan. 27) 1923.

of citrated blood in the same proportion of cases. For the first contention Brines<sup>2</sup> may be quoted as representative of many other authors, whereas the second contention has been upheld by Meleney and his associates,<sup>3</sup> Lewisohn<sup>4</sup> and others. These authors have compared large series of cases in which noncitrated blood was used with a similar series of transfusions by the citrate method and have shown that there is no difference in the number of chills if equal care as to details of technic is applied.

Thus it is evident that chills may follow and will follow any of the modern methods of blood transfusion. As stated, the question of their prevention is of the greatest importance and decidedly worthy of consideration.

We had always felt that the chills following citrate transfusion were not due to the addition of a minute quantity of sodium citrate to the blood. If sodium citrate were the cause of these chills, it would be logical to assume that every transfusion given by the citrate method should be followed by a chill. Furthermore, the percentage of chills should have been more frequent in the early days of citrate transfusion, before the technic was established in detail, with a gradual diminution in subsequent years. However, the course of events was just the reverse. The first seventeen citrate transfusions given in this hospital in 1915 were free from chills and post-transfusion reactions. Undoubtedly, the complete absence of untoward symptoms in this group of early citrate transfusions was of the greatest consequence. For, if we had encountered many chills in the infancy of this new method, the procedure might have been abandoned as too hazardous for the patient.

The absence of chills in this early set of cases, compared with the increase in subsequent years, could be explained only by the fact that these early transfusions were given by one person, who paid careful attention to the preparation of the instruments and solutions.

However, the personal supervision lasted over a brief period only. In the days of transfusion by vessel anastomosis, transfusion was resorted to in rare instances. Even the Lindemann method and the Kimpton-Brown tubes required specially trained workers. The utmost simplicity of the citrate method caused a rapid increase in the number of transfusions. After a short time, citrate transfusions were given in our institution by different members of the house staff.

Along with this lack of concentration, the number of chills increased at the Mount Sinai Hospital. Among the first 129 citrate transfusions, the percentage of chills was 15. Among 200 transfusions the percentage rose to 20, and among 365 transfusions to 24. The large number of chills led to investigations to reduce such reactions. By concentrating the performance of transfusions in the hands of eight senior members of the house staff, the number of chills fell from 23 per cent in 1922 to 13 per cent in 1923. However, in recent years the average percentage of transfusion chills has again risen to about 20 per cent.

The use of intravenous medication in the form of dextrose infusions or blood transfusions as a preoperative and postoperative procedure has increased considerably during the last ten years. It was noted that with the popularization of these procedures the per-

centage of the number of chills increased. One of us (N. R.) felt that the preparation of the instruments (cannulas, glassware and the like) used for intravenous therapy was too lax and required standardization.

The solution of this important problem depends on the important fact that chills and reactions following intravenous therapy are due to the presence of foreign protein. This protein is either extraneous matter present in the distilled water or the remains of changed blood proteins from a previous intravenous injection. Unless the instruments are cleansed with the greatest care immediately after a transfusion, minute blood clots and other foreign matter remain in the apparatus. They may cause a chill in the next case.

The main step, therefore, is the cleansing of instruments and the preparation of solutions so that they are rendered absolutely free of foreign protein. This can be done effectively only when the cleansing of the apparatus and the preparation of the solutions used for intravenous therapy are centralized. Only apparatus and solutions properly prepared by competent technicians in the central preparation room should be used for intravenous purposes.

With the opening of the new semiprivate pavilion, space for such a department was provided. It was put in charge of a head nurse. This division works absolutely independent of the main operating rooms. Formerly these sets had been cleansed and sterilized in the various wards, often by student nurses. This new department started to function, Oct 1, 1931. We are indebted to Miss Koch, head nurse of this department, for the efficiency with which this department has functioned since its inauguration.

For the removal and elimination of foreign protein from the distilled water, or old blood from the apparatus, the following procedures are carried out:

1 *Distilled Water, Sodium Citrate and Sodium Chloride*—Triple distilled water, obtained from a special Barstead still, is used for the preparation of sodium citrate (30 per cent) and sodium chloride (0.85 per cent).

Sodium citrate (30 per cent) may also be bought on the open market in 5 cc ampules. One should inquire from the manufacturer for sodium citrate prepared with triple distilled water. For actual use, 1 cc. of this concentrated sodium citrate solution is used for every hundred cubic centimeters of blood.

2 *Special Cleansing of Apparatus*—After each transfusion, all parts are separated and washed in cold water for the removal of blood. They are then washed in a dilute solution of green soap to which compound solution of cresol has been added to make up about a 1 per cent solution. They are then thoroughly rinsed in tap water.

All parts are then placed in a large pan containing sodium hydroxide (0.1 per cent solution) and boiled for five minutes. They are then transferred to a large pan containing distilled water, to remove the sodium hydroxide. The glassware and rubber tubing are again washed with triple distilled water and are ready to be assembled and sterilized, either in metal boxes or in special bundles, in the autoclave.

The glassware and rubber tubing are boiled separately. The needles are always sharpened before being treated but boiled for only three minutes in sodium hydroxide solution (0.1 per cent).

3 *Preparation of Apparatus for the Autoclave*—A. For the donor. A bundle containing the apparatus for taking the blood from the donor (two pyrex cylinders 500 and 10 cc., respectively, one glass rod, two tourniquets, two needles gage 13 and 15, Luer adapter and rubber tubing, one ampule of 30 per cent sodium citrate).

B. For the recipient. A metal box, as shown in the accompanying illustration, devised by Dr. Turner, director of the hospital, containing glassware, rubber tubing and cannulas for the transfusion into the recipient.

123 Brines, O. A. The Transfusing of Unmodified Blood. Arch. Surg., 123: 1-4 (Jan. 1) 1926.  
124 Meleney, H. E., Sears, W. W., Fortune, S. T., and Ferry, J. M. Post-Transfusion Reactions. Am. J. M. S., 154: 733 (Nov.) 1927.  
125 Lewisohn, Richard. Citric Method of Blood Transfusion After Ten Years. Bull. M. A. S. J., 190: 733 (May 1) 1924.



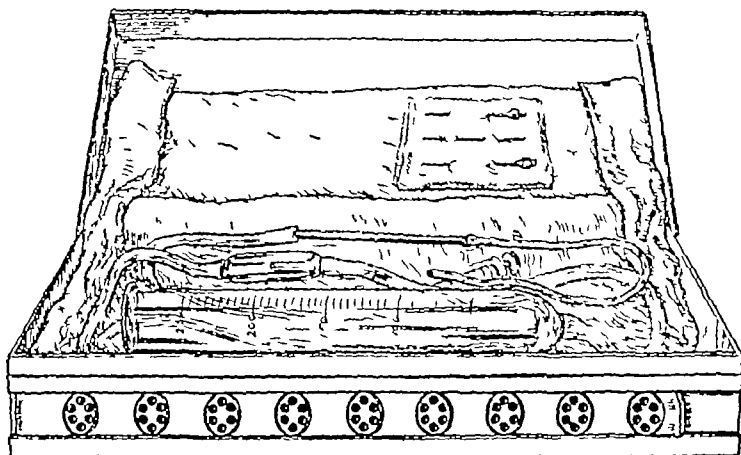
The great benefit derived from the strict enforcement of these rules is evident from the following statistical data

In 1930, among 412 transfusions given in the wards of the Mount Sinai Hospital, there were thirty-nine chills (9 per cent). Of these transfusions, 243 were given by the citrate method with twenty-nine chills (12 per cent), and 169 were given by the Unger or Rosenthal method with ten chills (6 per cent).

From Oct. 1, 1931, to Oct. 1, 1932, five chills occurred among 477 transfusions (1 per cent). Three hundred and thirty-one citrate transfusions were followed by four chills (1.2 per cent), and 146 Unger or Rosenthal transfusions were followed by one chill (0.7 per cent).

In this last series of citrate transfusions, the oldest patient was 86 years old and the youngest patient 12 days old.

It may be of interest to give some details about the five cases of post-transfusion chills. Two patients suffered from hemolytic icterus. In one of these, seven citrate transfusions were given with one chill, in the other, four Unger transfusions were administered to the patient with one chill. The third patient was suffering



Metal box containing one gravity flask (250 cc.), one short piece of rubber tubing with glass drip and clamp, a long piece of rubber tubing with stopcock and long glass connection, a short piece of tubing with adapter, and two needles of 18 and 19 gage.

from bleeding ulcer. He received two citrate transfusions, the first transfusion being followed by a chill lasting ten minutes and a temperature of 102.6, the second transfusion was not followed by a reaction. In the fourth case, a boy, aged 2 years, suffering from typhoid, the first citrate transfusion was uneventful, the second citrate transfusion was followed by a slight chill lasting five minutes. In the fifth case (carcinoma of the suprarenal gland) an Unger transfusion was given, July 20, without any reaction, whereas a citrate transfusion two days later was followed by a chill.

The fact that in cases 1 to 4 inclusive, only one out of seven, four, two and two transfusions, respectively, caused a reaction, is sufficient proof that an error in technic was the cause of the chill.

While we have put down the chills in cases 1 and 2 on the debit side of transfusion, it is possible that these chills were due to a hemolytic crisis, a frequent occurrence in hemolytic icterus.

These comparative statistics bring out some interesting points.

Chills following blood transfusion are not the necessary sequel of blood transfusion, they are avoidable. They are due to impurities in the instruments or solutions used in blood transfusion.

It has often been stated that chills will occur in very sick patients. This statement is incorrect. Many of the patients in the last series were desperately sick. Yet the absence of chills is striking.

Both the citrate method and the Unger apparatus were developed in this institution in 1915. Both methods have been used during the last eighteen years, the citrate method being employed about twice as often as the Unger method. It is of interest to note that during August and September, 1932, the citrate method was used almost exclusively, sixty-two citrate transfusions and two Unger transfusions were given during this period. It seems that the marked reduction in the number of reactions following citrate transfusions to about 1 per cent led most services in our hospital to give preference to the citrate method.

These statistics represent the combined material of the medical, surgical, gynecologic, neurologic, otologic, and pediatric services. About twenty different members of the house and resident staff were instrumental in giving these transfusions. In spite of the large number of doctors who had an active part in these transfusions, the number of chills could be held at a very low level. We feel that if a team of two or three men would perform all the transfusions given in this hospital, post-transfusion chills might be eliminated completely.

The important factor that the new organization plays in the reduction of chills is clearly evidenced by the following data. In the three months preceding the establishment of the new department, the incidence of post-transfusion chills following citrate transfusions was over 10 per cent, while in the subsequent six months no chill occurred among 154 citrate transfusions.

The same marked reduction of chills was observed not only in blood transfusions but after intravenous infusions as well.

We would not like to be misunderstood. While the proper preparation and sterilization of the instruments are of the utmost importance, other factors play a rôle in a successful transfusion. For instance, the rapid flow of the blood from the donor into the glass receptacle will prevent the formation of small blood clots, which might cause chills. A slow rate infusion into the recipient is another important factor. The importance of the slow drip has been pointed out recently by Hirshfeld and Hyman.<sup>5</sup> The citrate transfusion is the only method of blood transfusion that allows a slow rate for the infusion into the vein of the recipient.

It is unnecessary to dwell on the supreme importance of accurate blood tests as a safeguard against chills and other untoward symptoms.

The simple rules given here should eliminate post-transfusion chills. The rather frequent occurrence of chills following citrate transfusions had, in previous years, alienated many clinicians from this simple method. They can now turn back with safety to the citrate method, which is unsurpassed in simplicity and general applicability.

#### CONCLUSIONS

- 1 Post-transfusion chills are avoidable.
- 2 Chills are not due to the mixture of the blood with sodium citrate.
- 3 Elimination of the foreign protein element, detailed instructions for which have been given, will reduce the number of chills to a minimum.

<sup>5</sup> Hirshfeld, Samuel, Hyman, H. T., and Wanger, Justine J. Influence of Velocity on the Response to Intravenous Injections, *Arch. Int. Med.* 47: 259 (Feb.) 1931.

4 The use of solutions (sodium citrate and physiologic solution of sodium chloride) prepared with triple distilled water is indispensable

5 The incidence of chills following citrate transfusion has been reduced from 12 to 1 per cent

6 If instruments and solutions are prepared properly, citrate transfusion can be used with safety in every case requiring a blood transfusion

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## FUNCTIONAL DISTURBANCES OF PSYCHOGENIC NATURE

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Long experience has shown that it is by no means a popular task to give an address on psychoanalysis to a group of physicians. The reception of Professor Freud's first lecture in the Viennese Medical Society prescribed the attitude of the medical authorities for forty years. The causes of the resistance of medical circles against the concepts of psychoanalysis have been so often discussed that I do not wish to dwell on them again. On the other hand, I should like to win benevolent neutrality by calling attention to the chief historical and psychologic causes of the rejection of this branch of science in medical circles. After forty years' experience, the reasons for this rejection can be defined with considerable precision.

If psychoanalysis had remained the modest therapeutic device by which Freud and the small group of his followers tried to influence hysterical symptoms forty years ago, the whole embittered fight about psychoanalysis would never have arisen. In the course of time, however, from these modest beginnings a systematic concept of the human personality has developed, a concept which claims not only that it is able to explain certain symptoms but that it opens a new and unusual approach to the investigation and understanding of biologic processes. Like all fundamental scientific discoveries, psychoanalysis, after a period of general rejection, has influenced not only the closer field of psychopathology but the whole of contemporary thought. Strangely enough, in medical circles the resistance against this new approach to the problem of life has lasted longer than anywhere else, perhaps because it has a more intellectual background than the emotional rejection of the general public.

The philosophic basis of modern medical thinking seemed to be endangered by the introduction of psychologic factors. I refer to the principle that the body and its functions can be fully reduced to physical and chemical processes. It is very intelligible that modern medicine is protecting this principle with an almost frantic watchfulness. Medicine owes to this principle its imposing development in the second half of the nineteenth century, and the maintaining of this principle gave medicine the rank of an exact science.

I do not think, however, that the knowledge of psychophysiological interrelations by any means endangers the principle of the complete physical causality of the processes of life. This knowledge simply offers a new aspect of the problem of life different from the exclusively somatic analysis of biologic phenomena which was typical for the second half of the nineteenth

century. The aversion to the introduction of psychologic factors in medicine is due to the fact that it reminds the physician of those not very remote days in which medicine was sorcery, and therapy consisted in expelling the evil demons from the body. Medicine, this newcomer among the exact sciences, has the typical mentality of all newcomers. It tries to make one forget its dark, magical past and therefore it has to watch out carefully that nothing suspicious should remain in it which could betray these undesirable remnants of its prescientific periods. Physics, this aristocrat of the natural sciences, can better afford to overthrow its basic principles and undergo a profound reorientation, whereas medicine feels it necessary to emphasize its exact nature in keeping out of its field everything that seems to endanger its scientific appearance. Indeed, among the exact sciences medicine became more pope-like than the pope himself.

I do not need to go on with further characterization of the mentality of modern medicine. Physicians are well acquainted with it and also know that in recent years there has been a freer atmosphere. Especially the modern clinician is willing to recognize psychologic factors. The dogmatic denial or neglect of psychic influences on bodily processes is out of date and one could even speak at present of a psychologism in medicine which some authorities, such as Kraus, have felt the necessity of attacking from time to time. Indeed, formerly the attention of practitioners had to be called to the fact that, apart from bodily processes, there is a complex human personality with its important influences on bodily processes, whereas today physicians sometimes have to be reminded that apart from the conflict of the personality there is a complicated machine, the human body.

### INFLUENCE OF PSYCHIC FACTORS IN PHYSIOLOGIC CHANGES

It is only natural that this new psychologic interest of the modern practitioner is usually very superficial since it is not based on systematic knowledge. Courses in psychoanalysis do not belong to the official curriculum of the medical student, and only later in his practice does he come in contact with them, as a rule, however, in a very unsystematic way. He takes cognizance of it mostly when his patient gets cured of his stomach neurosis or hysterical aphonia by a magnetopath or a Christian scientist after he was treated for a long time unsuccessfully with drugs and the whole inventory of official methods. But it must be admitted that at present it is not easy to get acquainted with the results of modern psychopathology, its systematic presentation is almost entirely lacking and even a superficial orientation in this field represents an especially difficult study for which the medical student with his exclusively somatic knowledge is not at all prepared.

It is well known in the history of medicine that the neglect of the psychic factors is new and typical of the recent laboratory period of medicine, whereas the physician of the prescientific period paid more attention to the whole life situation of his patient. This attitude, which flourished up to the middle of the nineteenth century, is best reflected in the contemporary literature which liked to describe, for example, tuberculosis as a result of a great psychic catastrophe. The discovery of the bacillus or tuberculosis naturally degraded this theory to a superstition and only recently has there been again a willingness to take into account, apart from specific germs and natural and acquired immunity, the

psychic situation of the patient. But, even though the pressure of empirical observation does not permit one longer to overlook entirely the psychic factor, the concept that well definable physical-chemical processes are influenced by the psychic situation of the patient is too vague an idea to be taken very seriously. This psychic situation is usually referred to in general terms as nervousness, worries and excitements, and it is indeed unsatisfactory to connect such psychologic generalities with tangible physiologic processes. The fundamental importance of psychoanalysis for medicine is just here, that it substitutes for general psychologic terms, such as nervousness, worries and fears, well defined, highly specific, empirically observed psychologic facts. Thus psychoanalysis bridges the gap between psychologic and somatic facts.

And yet, just the introduction of psychologic details into etiologic thinking has provoked the greatest resistance on the part of medical circles. Under the pressure of empirical observation, modern medicine takes account of the influence of psychic factors on bodily processes, but it still is disinclined to go into the detailed investigation of these factors. There is a tendency to be satisfied with general terms such as nervous excitation or the pressure of the difficult life situation and to be willing to investigate physiologic changes called forth by intensive emotions such as rage or fear because they can be experimentally reproduced with animals. But at the same time one refuses to take cognizance of the finer analysis of psychic situations and problems of personality.

#### ANALYSIS OF PSYCHIC PROCESSES

It can easily be shown, however, that even the most common psychomotor processes cannot be satisfactorily described without the precise knowledge of psychic factors. As an example, the process of weeping or laughing may be considered, both of which are based on complicated psychomotor reflexes. A statement that sad ideas are able to influence the function of the lacrimal glands is a vague generality, the scientific uselessness of which becomes clear from the following imaginary experiment. The problem is to establish those conditions under which the physiologic processes of weeping is provoked in different individuals. Let it be assumed that to solve this problem a hundred individuals are exposed to a moving picture. It will then be observed that by a certain touching scene a certain percentage of the hundred are unable to control their tears and react with the unsuccessful suppression of sobbing, whereas another group are much less touched and a third group remain entirely cold and observe critically the plot without any emotional participation in it. It would be, however, entirely false to jump from these differences of reaction to the conclusion that the persons who remained cold are less sentimental in general, because a second experiment will prove that, confronted with another scene on the screen, a great percentage of those who remained undisturbed by the first scene will now react with intensive sobbing and crying. If this kind of observation in exposing the experimental individuals to different scenes is patiently followed up, it may be possible to distinguish certain specific situations to which certain groups of individuals react with weeping and the specific sensitiveness of certain individuals to certain situations might even be considered as a characteristic feature of them. Experimentation may lead one thus far in this complicated field, but, if one wants to have a deeper

insight into the intricate process of weeping, it will be necessary to investigate each individual separately.

Such an individual psychologic study necessarily leads to very complex psychologic causal chains. In order to establish the specific sensitiveness of the experimental subjects to certain scenes, one must know their past life history, the whole development of their personality, because one will be able to understand the conditions under which an individual cries only from the experiences of his early life. The significance is now apparent of my former statement that the psychophysiologic process of weeping cannot be described by a general statement that certain sad ideas or impressions are able to influence the function of the lacrimal glands. If scientific demands regarding psychophysiologic processes are to be as strict as those accepted for somatic processes, the psychologic side of a psychomotor reaction has to be investigated with the same precision as is usual in studying organic processes.

Just this thorough analysis of psychic processes is made possible by the psychoanalytic technic. By this method it becomes possible to answer the question encountered in the former experiment, namely, why certain individuals are especially sensitive to certain situations.

#### PSYCHOGENIC DISTURBANCES OF THE ORGANS

In the field of pathology as well as in these problems of the everyday life, it is just as unsatisfactory to accept general phrases—for example, saying that the stomach symptoms of a patient are based on his nervousness and are provoked by steady excitements. Such an explanation is exactly as empty as the one that weeping is caused by sad ideas. A psychogenic stomach trouble is based on just as specific psychic processes as weeping or laughing or blushing. Here again it is necessary to establish the specific psychic content that is responsible for the stomach symptoms. Only such a detailed insight into the totality of a psychophysiologic process allows a real causal therapy.

Before going further, however, it seems advisable to define more precisely the term "psychogenic disturbance of organ functions." The analogy comparing it with psychophysiologic processes such as weeping, laughter or blushing is apparently not complete. Normally the individual who laughs or weeps is able at least to some degree to define the psychologic reason that impelled him to laugh or to weep. This is not the case with patients who are suffering from a stomach neurosis. Such a patient is not able to describe those emotions which are responsible for his stomach symptoms, he is not even aware of the psychic origin of his symptoms, he will deny it and try to find some somatic basis of his ailment, and in so doing is, in most cases, supported by his physician.

A further difference between the normal processes of expression such as weeping or crying and psychogenic disturbances of the organs is that in a normal psychomotor process of expression an emotional tension is adequately abreacted and relieved, whereas the pathologic function of an organ is a chronic disturbance that is not able to give full relief to the causating psychic tendency. The original observations of Freud and Breuer showed that an hysterical innervation takes place when certain emotions are excluded from being normally expressed. Such an inhibition of expressing an emotion is generally known today as repression. Emotions that normally, if they become conscious, are expressed through motor abreactions as laughter, weep-

ing, scolding, complaining, physical aggression, and through the psychosexual reflexes may be excluded from consciousness or, in other words, repressed. If they are excluded from consciousness however, they are excluded at the same time from these normal expressions. Hysterical symptoms can be considered unusual expressions of repressed emotions which, just on account of the repressions, cannot be relieved by the normal psychomotor reflexes. They are dynamic substitutes of normal expressions of repressed emotions.

#### NATURE OF THE FUNCTIONAL DISTURBANCES

This formulation allows a more precise definition of the so-called functional disturbances. These, though essentially identical with psychophysiologic processes of expressing emotions such as laughter and weeping, are nevertheless distinct from them by three characteristics. 1 In the case of a psychogenic disturbance of an organ the emotion which seeks expression is unconscious, that is to say, repressed. 2 The psychogenic disturbance is an unusual or, one should say, an incomplete expression of a psychic tension. 3 The symptom is not able to relieve the psychic tension in the same way as normal psychomotor reflexes do. The repressed tendency, excluded from the consciousness and thus from normal expression, sustains a steady tension which is the cause of the chronic dysfunction. Psychoanalysis was able to give these observations a formulation which is of general importance regarding the understanding of biologic processes.

Every psychic tendency seeks an adequate bodily expression. The normal way of such expressions goes through the system that is called the conscious ego, which is probably localized anatomically and physiologically in the cortex. The conscious ego has the control over those muscular innervations which serve to relieve psychic tendencies which may also be called psychic needs. If this passage through the conscious ego is blocked, an unusual relief comparable to a short circuit takes place: this is the hysterical dysfunction of the organs. Freud and especially his follower Ferenczi made the bold assumption that the whole body, all physiologic processes, even those which have no immediate connection with psychic life, may serve to relieve psychic tensions. The anatomic and physiologic basis of these psychophysiologic reactions is well known to everybody—it consists in the connection of the cortex to the different parts of the body through the peripheral and vegetative nervous system. The only difference between conscious and unconscious innervations is that the latter do not go through the conscious ego. If it is really desired to give an anatomic-physiologic explanation for this difference between conscious and unconscious innervations, it could be assumed that the conduction of the sensory stimuli to the motor fibers takes place in hysterical organ-processes through subcortical centers, and not, like voluntary innervation, through the motor centers in the cortex. However, so far, knowledge of the anatomic-physiologic basis of these processes is lacking, and even methods of investigating it do not exist. The psychoanalytic technique, on the other hand, makes it possible to reconstruct at least the psychic side of the psychomotor processes and to make conscious the unconscious content of them. The therapeutic significance of this procedure is that the unconscious psychic stimulus after having become conscious, has the possibility of finding relief in the normal ways of expressing emotions which destroys the dynamic foundation of the neurotic symptoms.

The investigation of the psychic constellation of the patient is important even in cases of certain organic disturbances. It is well known to every physician that functional disturbances of a chronic nature may, in the course of time, lead to real organic disturbances. In cases in which the functional disorder is caused by psychic factors, it is well justified to speak of psychogenic organic disturbances because they are the end-results of chronic functional disturbances caused by psychic stimuli. So far as treatment is concerned, naturally, in all cases in which functional disturbances have led to a pronounced morphologic change, psychotherapy comes too late and a local therapy is indicated.

#### ORIGIN OF PEPTIC ULCER

It is not my aim here to give a complete survey of etiologic and therapeutic attempts of this kind and, therefore, I take for illustration one example, the etiologic problem of peptic ulcer. It is generally admitted today that local factors such as chronic hypersecretion, local anemia of the stomach, accidental erosions of the mucous membrane or disturbances of the motility of the intestinal tract, all of which may contribute in different combinations to the development of peptic ulcer, do not give a final solution as to the etiology. The detailed knowledge of all these local processes merely shifts the problem to the question "What is the cause of all these local changes, of chronic hypersecretion or local anemia or disturbances of the peristalsis?" From time to time the central origin of these local changes has been assumed by different authors.

Lately these assumptions have been corroborated by the observations of Harvey Cushing so far as he described several cases of sudden perforations of the stomach after operations in the midbrain. He assumed that the operation mechanically stimulated the midbrain centers, causing an irritation of the parasympathicus, which led to the local changes in the stomach. Under the influence of Cushing, Richard Leight succeeded by the use of pilocarpine in producing artificial peptic ulcers in dogs. Even though it is not justified simply to identify these experimental perforations with peptic ulcers, these experiments unambiguously show that local changes in the stomach, similar to peptic ulcers, may be called forth under the influence of nervous stimuli. Of course it must be recognized that in the majority of cases the central stimulus must have another origin than brain operations or the pharmacologic stimulation of the parasympathetic system. Psychoanalytic experience makes it most probable that in many cases the stimulation of the parasympathicus may have a psychologic basis. The chronic nature of most ulcers, the fact that the ulcer usually appears after a longer period of functional stomach troubles, indicates that the ulcer itself is merely the end-result of a long chain of events.

I have had occasion in several cases to establish the psychic origin of functional stomach troubles that preceded clinically diagnosed peptic ulcers, and in a lately analyzed case it was even possible to reconstruct with great precision those psychologic factors which were the dynamic background of functional stomach symptoms for a period of fifteen years. In this, as in other cases, I was able to distinguish certain specific psychic tendencies that seem to have a very near affinity to the functions of the stomach. If certain wishes and claims of a receptive nature, the wish to be loved, to be helped, to be taken care of by others, a

longing for the maintenance or revival of the infantile relation of the child to the mother, are repressed in the unconscious, they have a definite tendency to influence the functions of the stomach. Such tendencies, if present in adults, have to be repressed because they are incompatible with the dominating ambitions of the conscious personality with the strife for independence, masculinity or activity. Repressed and thus excluded from gratification, they maintain a permanent tension which can be considered as a chronic unconscious psychic stimulus.

The question is only "Why does this kind of psychic tendencies have the inclination to influence the functions of the stomach?" For the trained psychoanalyst, however, this affinity of passive receptive tendencies to the stomach functions is not at all astonishing or unexpected. The child experiences the first gratifications of its receptive tendencies in being nourished, and thus the emotional association between the passive wish to be loved, to be taken care of, on the one hand, and the physiologic functions of nutrition, on the other, is established in the very first period of postnatal development. The intuitive knowledge of this psychic connection between the wish to be loved and to be fed is reflected in the German proverb "Die Liebe geht durch den Magen," which, translated into English idiom means "The way to a man's heart is through his stomach." Indeed, the first woman, Eve, seduced Adam by giving him the apple, which is a symbolic reference to the female breasts. This symbolic reference is especially manifested in the German expression "breast apples" (*Brustapfel*). Moreover, everybody knows the stereotyped situation in the love stories of the Renaissance in which the woman experienced in love introduces the love scene by an exquisite dinner and uses this time aged and approved method of Eve to seduce an innocent youth.

#### FINAL EXPRESSIONS OF UNCONSCIOUS TENDENCIES

Now to return to the field of pathology. If the wish to be loved by a protecting woman according to the infantile pattern is excluded from consciousness because it hurts the self esteem of the personality, it mobilizes the emotionally associated wish to be fed. The dependence of the secretive functions and the motility of the stomach on psychic stimuli is well established through the studies of Pavlov and his school. The wish to be fed, which in such cases is independent from hunger and serves as a substitute for the wish to be loved, may serve as a specific and chronic stimulus which influences the functions of the stomach. The stomach exposed to this chronic stimulus constantly behaves itself as it normally does only during the periods of digestion. Naturally, only experiment can decide the correctness of this assumption. But no doubt in this way a chronic hypersecretion or hypermotility may arise which justifiably can be called a psychogenic disturbance no matter in which special way the psychic stimulus changes the normal functions of the stomach. As may now be observed, the psychoanalytic investigation is able to give to the concepts "nervous hypersecretion" or "psychogenic organ disturbances" a well definable content in describing those specific psychic factors which produce certain functional changes.

I do not want to speak about therapeutic results gained by analytic treatment of such cases, since therapeutic success does not at all prove the correctness of theoretical concepts. It is well known that functional disturbances frequently yield to suggestion. Only the careful and comparative observation of physical mani-

festations and psychic processes allows conclusions regarding the causal connection of psychic factors with physical symptoms.

I realize that such a brief reference to clinical observations is not convincing, even a citation of all details would not be a satisfactory substitute for direct observation. Even a complicated surgical operation cannot be described very satisfactorily. Description can never make up for one's own observation. Psychologic descriptions are even more difficult and subtle than surgical procedures, and, therefore, in this field direct observation is absolutely indispensable. My short reference to clinical material therefore has less the purpose to prove the correctness of my statements than to present an approximate idea of the specific nature of those unconscious psychic tendencies which are discovered as the motor powers behind certain functional disturbances. I do not say either that the knowledge of the psychic, that is to say, dynamic, background of the symptoms is able to give a complete etiology of those functional disturbances which may lead in time to peptic ulcers. It remains for the future to describe, with the help of simultaneous somatic and psychologic analysis of cases, the complicated concatenation of psychic and somatic factors. What I consider as established is the fact that many organic cases develop according to the following general scheme: 1. There is an originating chronic psychic stimulus in the form of a repressed unconscious psychic tendency. 2. This leads to a functional disturbance of an organ. 3. The last phase manifests itself in organic morphologic changes, the end-result of the functional disturbance.

The choice of the organ that serves for the expression of unconscious tendencies depends on the specific nature of this tendency. Just as passive receptive claims to be loved have an intimate relation to the alimentary tract, so do fear and anxiety seem to have a close connection with the circulatory system, whereas the emotions of spite, stubbornness or rejection of the environment may frequently, if they are repressed, find expression in the disturbance of the sphincter-function of the anus.

So far as therapy is concerned, the psychologic approach is indicated only as long as the functional disturbance has not yet led to organic changes that make local therapy necessary. Consequently, psychotherapy has mainly a prophylactic value. It consists in giving the patient the possibility of relieving psychic tendencies in the normal way by making conscious those repressed tendencies which just on account of repression, could not be expressed normally and had to find unusual, that is to say, pathologic, expression.

#### CONCLUSIONS

The influence of emotional factors on the vegetative nervous system is so well known today that this general statement would not have justified my holding the reader's attention to this subject throughout the length of this paper. What I wanted was to emphasize the specific nature of those psychic factors which participate in psychophysiologic reactions. The trained psychoanalyst has the same feeling in seeing how easily internists are contented with such general terms as a "psychogenic disturbance," "a nervous palpitation," or a "nervous dyspepsia," as a physician has in reading in medical books that are over a hundred years old about bad or thick blood, unclean urine or black bile. The same scientific standards required by physicians in describing organic processes, a clear and precise knowl-



edge of the physicochemical background of biologic processes, psychoanalysis requires in dealing with the problems of human personality. The description of a psychophysiologic process can be considered satisfactory only if the psychic side is as precisely known and described as the physiologic side of the process.

My statements can be summarized in two points: 1 I wanted to emphasize the tendency of unconscious psychic processes to find bodily expression and call attention to the special affinity of unconscious processes to the vegetative nervous system. 2 I wanted to demonstrate the specific nature of unconscious psychic factors that represent the psychomotor basis of certain functional disturbances. The general statement that emotional factors are able to produce functional disturbances in different organs is unsatisfactory from the etiologic as well as from the therapeutic point of view. For a causal therapy, it is just as necessary to clarify in detail the psychic factors as to know precisely the somatic processes.

The desire of many physicians to substitute for psychologic descriptions the corresponding physiologic processes in the cortex and in the subcortical centers is noteworthy but belongs to the future and, being merely a desire, does not justify the neglect of psychologic facts that are known today. Furthermore, it is an open question whether the precise knowledge of brain processes will ever be able to explain the complicated psychic relation of the individual to the environment just as satisfactorily as the knowledge of the psychic circumstances.

It may sound unusual that many of the functional troubles of the inner organs are based on the disturbances of the individual's emotional relation to his environment. In considering the whole structure of the nervous system it manifests a certain division of labor in that the relation to the environment, on the one hand, and the regulation of the inner processes, on the other hand, are divided between the cerebrospinal and the vegetative nervous system. The voluntary innervations, which are subject to the control of the cerebrospinal system, regulate the attitude to the environment, the inner organ processes are controlled by the automatic functions of the vegetative centers. A psychogenic disturbance of an organ can be considered as the last result of a disturbed emotional relation to the environment. It represents a confusion in the division of labor of the nervous system: the dividing line between the inner and foreign politics of the organism is mixed up. If a psychodynamic quantity which under normal conditions would lead to an external action becomes repressed, it takes a wrong pathway and instead of a voluntary innervation it leads to innervations in the vegetative system. Thus for example, in the place of the normal expression of love or hate, an inner process is influenced. This pathologic deviation of a psychodynamic quantity from external action that is to say, from voluntary innervation to the innervation of a vegetative organ can be compared with a social phenomenon which so often takes place in the politics of the nations. Ambitions in the field of foreign politics which become frustrated by a military defeat usually lead to an over-lit atmosphere in the inner politics of the nation. This is best shown by the fact that revolutions start usually after lost wars and that the method which has proved to be the best to check revolutionary movements is to start military action against a foreign nation. Inner social tensions can be best relieved by diverting the energies that are engaged in inner affairs outward

in conducting them into the channels of foreign politics. And, vice versa, the decrease of the possibilities of active foreign politics enhances the danger of inner social difficulties.

Every neurosis, no matter whether it is expressed merely by psychic processes or by bodily disturbances of functional nature, is the result of a defeat of the individual in his psychic relation to the environment, in his foreign politics. Every hysterical organ disturbance is the dynamic substitute for omitted actions. The emotions and wishes to which the individual cannot give expression and relief in actions concerning the environment find expression in the unintelligible tacit language of inner organic processes.

43 East Ohio Street

## THE HAZARDS OF INTRAPERITONEAL INJECTIONS

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Intraperitoneal injections of physiologic solution of sodium chloride, first introduced by Blackfan and Maxcy<sup>1</sup> in 1918, have been employed extensively in the treatment of dehydration in infants. More recently the administration of dextrose,<sup>2</sup> diphtheria antitoxin,<sup>3</sup> neoarsphenamine,<sup>4</sup> iron<sup>5</sup> and blood<sup>6</sup> has been recommended by this route. Some authors<sup>7</sup> have considered typing or cross agglutination unnecessary preliminary to this method of blood transfusion.

The use of the intraperitoneal route permits more rapid introduction into the body of relatively larger quantities of fluid than is possible by hypodermoclysis. It is also easier than venipuncture, hence its popularity in the treatment of infants by physicians in the numerous small hospitals in which interns are not available.

Some of the dangers of this procedure, as illustrated by the cases reported in this article, are

- 1 Perforation of the intestine
- 2 The introduction of incompatible blood into the circulation
- 3 Hemorrhage from injury of the "obliterated" hypogastric artery

It is said to be exceedingly difficult to perforate with a needle the intestine of living animals or of cadavers. There is a widespread conviction that intraperitoneal injection is entirely safe in the absence of marked abdominal distention or of inflammatory disease of the abdomen. It is the practice in some large clinics and on the part of many pediatricians to ignore moderate tympanites when fluids are needed. The dearth of unfavorable reports in the literature suggests that this feeling of safety is well founded.

- 1 Blackfan K. D. and Maxcy K. F. The Intraperitoneal Injection of Saline Solution. *Am. J. Dis. Child.* 15: 19 (Jan.) 1918.
- 2 McLean Stanford and Lang C. A. Fluid Injections in Dehydrated Infants. *Am. J. Dis. Child.* 19: 359 (May) 1920. Sanford H. N. and Heitmeyer P. L. Intraperitoneal Use of Dextrose in Treatment of Diseases of Children. *J. A. M. A.* 90: 737 (March 10) 1928.
- 3 Platou E. S. *Arch. Pediat.* 40: 575 (Sept.) 1923.
- 4 Rosenberg William. The Intraperitoneal Administration of Neoarsphenamine. *J. A. M. A.* 82: 682 (March) 1924.
- 5 Sanford H. N. Iron Intraperitoneally. *Tr. Am. Ped. Soc.* 1932.
- 6 Superstein D. M. and Sansby J. M. Intraperitoneal Transfusion with Citrated Blood. *Am. J. Dis. Child.* 25: 107 (Feb.) 1923. Sansby J. M. and Superstein D. M. Intraperitoneal Transfusion with Citrated Blood. *J. A. M. A.* 80: 1763 (June 16) 1923. Rub H. O. and McClelland J. E. *Ohio State M. J.* 19: 759 (Nov.) 1923. Grulee C. G. *New York State J. Med.* 26: 921 (Nov. 15) 1926. Cole W. C. C. *Child.* 37: 497 (March) 1929. Superstein D. M. *Journal Lancet* 50: 547 (Nov. 15) 1930.
- 7 Griffith J. P. C. and Mitchell A. G. The Diseases of Infants and Children. ed. 2 Philadelphia, W. B. Saunders Company 1: 275 1927. (March) 1929. Cole W. C. C. and Montgomery R. *Arch. Pediat.* 12: 13.



The only precautions ordinarily taken to obviate perforation of the bowel consist in using a rather dull needle with a short bevel and in pinching up the tissues of the abdominal wall as the needle is introduced. In most clinics much emphasis is placed on avoiding injury to the bladder. The midline below the umbilicus is commonly chosen for inserting the needle because this is known to be a relatively avascular area.

If the peritoneal route is to be used for injection of fluid, the anatomic relationships of the region must be known. The linea alba<sup>8</sup> is a tendinous raphe in the midline of the abdomen, formed by the blending of the aponeuroses of the obliqui and transversi. In its lateral margins for a short distance below the umbilicus run the obliterated hypogastric arteries (lateral umbilical ligaments). Most authorities agree with Gray<sup>9</sup> that "at birth when the placental circulation ceases, the pelvic portion of the artery remains patent and constitutes the hypogastric of the adult, the remainder of the vessel is converted into a solid fibrous cord" and again<sup>10</sup> "of the hypogastric arteries the parts extending from the sides of the bladder to the umbilicus become obliterated between the second and fifth days after birth and project as fibrous cords."

The following five cases are reported because they illustrate some of the dangers encountered in using the intraperitoneal route. They occurred in the comparatively limited experience of one man in hospital and private pediatric practice during the course of nine years. It is felt that accidents similar to those reported may be more common than has been realized heretofore, although reports in the literature are rare.

#### REPORT OF CASES

**CASE 1<sup>11</sup>—History**—A male infant, aged 6 weeks, was admitted to the pediatric service of the New Haven Hospital, Aug. 14, 1923, because of acute intestinal indigestion with intoxication. Death occurred, August 29. Intraperitoneal injections of saline solution were given almost daily as well as repeated intravenous blood transfusions. During the last week the abdomen, which had been scaphoid, became distended. Autopsy revealed bronchopneumonia, acute peritonitis and two perforations in the jejunum. The perforations were unquestionably traumatic in origin. There were no adhesions between the intestine and the parietal peritoneum.

**Comment**—The usual precautions of using a dull needle and of pinching up the tissues were observed. During the last week of life, moderate abdominal distention existed. One must infer from this case that tympanites constitutes an absolute contraindication to intraperitoneal injections.

**CASE 2**—A Negro boy, aged 5 years, was admitted to St. Leo's Hospital, May 13, 1926, for surgical repair of a right inguinal hernia. After a successful operation he was referred to the pediatric service for treatment of sickle cell anemia and splenomegaly. Since at that time there were in the literature no reports of the failure of splenectomy to cure this disease, it was planned to overcome his anemia with repeated blood transfusions and then to perform a splenectomy. Three hundred cubic centimeters of citrated blood was administered intravenously, May 23. This was followed in a few hours by a chill and a moderate febrile reaction. Considerable improvement in his general condition ensued, and a second transfusion was given, June 11. Cross agglutination was not repeated, as the same donor was used. After 50 cc. had been injected intravenously, the needle point became dislodged and the 175 cc. of blood remaining was administered intraperitoneally. Within two hours a violent local and general reaction ensued with chills, high fever, extreme tympanites, cyanosis, severe

abdominal pain and vomiting. After twenty-four hours the urinary changes of acute hemorrhagic nephritis appeared and marked jaundice was noted. These symptoms persisted for four days and then their intensity gradually diminished. The abdominal symptoms resembled closely those seen in the course of acute peritonitis. This unfortunate accident so alarmed the parents that they refused to permit another transfusion or a splenectomy. The patient was discharged two weeks later in good condition except for marked secondary anemia.

**CASE 3—History**—A white boy, aged 2 years, was admitted to the Clinic Hospital, March 3, 1927, for treatment of a chronic infection of the throat and ears and severe secondary anemia. An intravenous transfusion of 250 cc. of citrated blood was administered, which was followed by a transient febrile reaction without chills, cyanosis or dyspnea. Two weeks later a second transfusion was given from the same donor, whose blood had cross agglutinated perfectly on the first occasion. Through a misunderstanding, the matching was not repeated. After 25 cc. had been given into the median basilic vein, the needle point became dislodged. The remaining 225 cc. of citrated blood was administered intraperitoneally. Within two hours a terrific local and general reaction appeared, characterized by chills, high fever, vomiting, extreme abdominal distention and pain. The vomiting was so severe that for four days nothing taken by mouth was retained, and it was necessary to administer fluids subcutaneously. The urinary changes of acute hemorrhagic nephritis appeared. After five days these serious and alarming symptoms ameliorated, and the patient thereafter made a gradual and complete recovery.

**Comment**—Cases 2 and 3 emphasize the necessity, now well known, of cross agglutinating the bloods of donor and recipient prior to every transfusion, irrespective of whether or not the same donor has been used previously with impunity. They also bear out the known facts that an intraperitoneal transfusion is a true transfusion<sup>12</sup> and that preliminary cross agglutination is a *sine qua non* of this procedure as well as of intravenous transfusion. It is quite probable that the violent peritoneal reaction so delayed absorption into the circulation of the incompatible blood that the kidneys were able to survive the strain of excreting the offending substance. In this sense, intraperitoneal administration may have been life saving.

**CASE 4—History**—A full term male infant, aged 5 days, was admitted to the Sternberger Children's Hospital, Aug. 2, 1931, because of vomiting. Examination revealed dehydration and an atresia of the esophagus. Since the atresia was of the type in which a communication exists between the stomach and the lower respiratory tract, the parents were told that nothing could be done for the child. They insisted that dehydration be overcome. Accordingly, 100 cc. of salt solution was administered intraperitoneally in the usual location and with the customary technic. The infant died four days later. Autopsy revealed atresia of the esophagus, a communication between the stomach and the trachea, and a huge hematoma in the parietal peritoneum arising from a punctured right "obliterated" hypogastric artery. The vessel was injured at a point 1 inch (2.5 cm.) below the umbilicus and at this level had a patent lumen. Gross serial sections revealed a patent lumen up to the umbilicus. A similar degree of patency was demonstrated in the corresponding vessel on the left.

**Comment**—A hemorrhage so great might well have been fatal of itself in a small, feeble baby. Apparently, the lumen of the "obliterated" hypogastric artery is not always obliterated by the fifth day of life. There was no bleeding elsewhere than about the injured vessel. This militates against the possibility of a blood dyscrasia.

**CASE 5—History**—A premature male infant, aged 3 weeks, weighing 4 pounds (1,814 Gm.), was admitted to the Sternberger Children's Hospital, July 20, 1931, because he was not thriving. He gained slowly until an infection of the upper respiratory tract supervened, July 30, with vomiting, diarrhea and dehydration. One intravenous blood transfusion and numerous intraperitoneal injections of salt solution were administered. Following the last injection, August 9, the infant failed rapidly and died within twelve hours. Postmortem examination revealed bronchopneumonia, a huge hematoma

<sup>8</sup> *Gray's Anatomy*, ed. 20, 1918, p. 417.

<sup>9</sup> *Gray's Anatomy*, ed. 20, 1918, p. 615.

<sup>10</sup> *Gray's Anatomy*, ed. 20, 1918, p. 542.

<sup>11</sup> This case is reported with the permission of Dr. Grover F. Powers, professor of pediatrics, Yale University School of Medicine.

about the right lateral umbilical ligament, and a large amount of blood in the pelvis and right lumbar gutter. The right "obliterated" hypogastric artery had been punctured about 1 inch (2.5 cm.) below the umbilicus.

**Comment**—There was no deviation from the usual size and sharpness of the needle or from the ordinary technic in giving this injection. The hemorrhage was great enough to have assisted materially in the fatal outcome. Gross serial sections of this vessel and its mate revealed patency of the lumens comparable to that seen in the previous case.

Whether such patency exists commonly after the fifth day of life or only in premature or unusually small infants remains to be determined. However, these two incidents have left the indelible impression that intraperitoneal injections are dangerous in premature or new-born infants when administered in the midline below the umbilicus. It is realized that very few infants of this type need parenteral fluids. In such cases hypodermoclysis or intraperitoneal injection elsewhere than in the midline suffices.

#### SUMMARY

In one case, perforation of the intestine occurred during intraperitoneal injection of saline solution.

In two instances, incompatible blood administered intraperitoneally produced violent local and general reactions.

In two cases, serious hemorrhage resulted from puncture of the "obliterated" hypogastric artery during the course of intraperitoneal injections in very young infants.

#### CONCLUSIONS

1 Abdominal distention is an absolute contraindication to intraperitoneal injection.

2 The introduction of unmatched or incompatible blood into the peritoneal cavity is dangerous and unwarranted. Cross agglutination before each such transfusion is necessary, irrespective of whether or not the same donor previously has been used with success.

3 In premature or very young infants, intraperitoneal injection in the midline below the umbilicus may produce serious hemorrhage by wounding the "obliterated" hypogastric artery.

4 Intraperitoneal injection, while affording the most satisfactory method of administering fluids parenterally to infants, is not so entirely devoid of danger as is generally believed.

371 North Elm Street

**Diagnosis of Coronary Thrombosis**—Let us remember that coronary thrombosis is primarily an arterial disease. Therefore the recognized marks of arteriosclerosis are the signs to be sought. Of these may be mentioned the accentuated aortic second sound and the thickening of the superficial arteries, of the finer visible arteries in the retina, and of the largest artery—the aorta—as revealed so clearly by radioscscopy. Although it is true that the heart sounds are often distant, less distinct than usual, we dare not place much reliance on a sign so common in other conditions and so dependent on the personal factor. The heart is little or not at all enlarged unless there has been associated hypertension to cause it. The diagnosis will be helped by requiring the patient to map with his index finger (not with his hand) the total area of the pain. This will almost invariably include part of the sternum, a strong diagnostic point being sternal pain. It is best to avoid the ambiguous phrase of pain over the heart, with its loose associations in the mind of doctor and patient, sternal being a safer term than precordial for use in diagnosis, which as already emphasized rests upon the patient's description of his attack. Fortunately the electrocardiograph provides evidence which compensates for this absence of physical signs. In differential diagnosis we must be prepared to reject the patient's belief, often no more than a self-deception, that it is indigestion.—Parkinson John. *Coronary Thrombosis*. *Brit. M. J.* Sept. 17, 1932, page 550.

## CORONARY OCCLUSION AND FATAL ANGINA PECTORIS

### STUDY OF THE IMMEDIATE CAUSES AND THEIR PREVENTION

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The incidence of angina pectoris associated with coronary artery disease is increasing. It probably will continue to increase if medical progress continues and greater numbers live to reach angina ages. Its control is beyond the horizon of preventive medicine, nor is it at all likely that drug treatment or surgical measures will prove more than useful adjuncts to treatment in more than a small fraction of cases. One is forced, then, to rely chiefly on the daily regimen in giving advice to this increasing number of patients. It seems to us that we have been hindered in efforts toward improving the effectiveness of these daily regimens by a general belief that fatalities in angina pectoris are essentially haphazard in their origin and that regimens are comparatively ineffective to control them. One factor that has contributed to this attitude is that only recently have physicians attained a clear clinical picture of angina pectoris due to coronary artery disease and established comparatively satisfactory working associations of the clinical events with their pathologic manifestations.<sup>1</sup> Investigators have naturally been concerned with diagnosis and pathology. Now, concentration on coronary phenomena tends to make one take a fatalistic attitude toward the control of angina pectoris. Case A is given as an example.

**CASE A**—A lawyer, aged 52, known to have had angina on exertion for one year but able to carry on with his profession and live in comfort so long as he observed mild restrictions, while returning from a ten days' rest at a private camp was seized with angina, which persisted. Signs of coronary occlusion developed. Twelve days later, while apparently progressing satisfactorily, he died suddenly. Postmortem examination showed a thrombus occluding a ramus of the left coronary artery and infarction of a wide area in the left ventricle, which had ruptured.

The clinical and physical signs and pathologic report are impressive. What can one expect to accomplish with merely a regimen in the face of such threatened occurrences? How shall one value the information obtained later that this patient spent the days before his fatal attack on an alcoholic debauch? Its significance appears overshadowed by the results of the postmortem examination.

Another confusing factor that may tend to hinder the formation of clear rules for the daily regimen of patients with angina pectoris is that the most authoritative information on angina pectoris comes from modern articles that are based on analysis of a whole group of patients classifiable under angina pectoris. The mem-

<sup>1</sup> Levine S. A. *Coronary Thrombosis Its Various Clinical Features*, *Medicine* 8: 245-418 (Sept.) 1929. Mackenzie James, *Angina Pectoris*, *Oxford Medicine* New York 2: 422 1929. Herrick J. B. and Vozum F. R. *Angina Pectoris Clinical Experience with 200 Cases* J. A. M. A. 70: 67 (Jan. 13) 1918. Brooks Harlow. *Concerning Certain Phases of Angina Pectoris Based on Study of 350 Cases* Am. J. M. Sc. 192: 734 (Dec.) 1931. White P. D. and Bland E. F. *Further Report on the Prognosis of Angina Pectoris and of Coronary Thrombosis* Am. Heart J. 7: 1 (Oct.) 1931. White P. D. *Heart Disease* New York, Macmillan Company, 1931 p. 614. Blumer George. *Coronary Occlusion and Angina Pectoris* *New England J. Med.* 205: 495 (Sept. 3) 1931 1923.

<sup>2</sup> Herrick and Vozum. Brooks. White and Bland. White.

bers of such a group include widely differing clinical problems which vary greatly in their importance in clinical medicine. Certainly in our whole group of such cases<sup>3</sup> and it is likely that our group resembles the others, we find many in which the disease appears as a comparatively merciful termination or merely an additional symptom of widespread disabling progressing arteriosclerosis, and other cases in which its first appearance kills or disables. For example

CASE B—A woman, aged 75, known to have had hypertension for twenty years, during her last two years increasingly feeble mentally and physically, contracted a moderately severe infection of the upper respiratory tract, from which she improved very slowly.<sup>4</sup> For four months she was confined to her hotel room under nursing care. One night she complained for the first time of angina pectoris, which grew worse, signs of coronary occlusion developed, and she died after four days.

Such cases are comparatively unimportant in clinical work. Such deaths are essentially inevitable. But there is a large group in which the patients have angina pectoris on sufficient exertion and have no other serious handicaps; patients who would be effective were it not for this limitation of their energy and their knowledge of its menace, many of this group are highly effective in spite of their limitations. For example

CASE C—A lawyer, aged 59, complains that, since the onset of cold weather, on climbing a steep hill from the railroad station to his home he has had to stop part way because of a tightness under the sternum, extending to right and left, which grows worse if he continues but disappears if he stops and does not return if he climbs slowly. He has no mental and no other physical disabilities. A thorough physical examination is negative.

This last is one of an important group of patients. Only this group shall be considered in this article.

Questionnaires that we have sent out from time to time to physicians who have referred cases have shown us that the majority of our patients who fall into the important group just illustrated, namely, those who when seen by us had been limited in their exertion by angina but had not up to that time been severely disabled (the group illustrated by case B) who had later died, have died quickly or slowly as the result of a coronary occlusion, or suddenly during an attack of angina.<sup>5</sup> This is in accord with the experience of others.

Because to some extent we have shared the essentially fatalistic attitude toward deaths among patients with angina pectoris, which we find is generally held by physicians and laymen, though we have always endeavored to furnish our patients with regimens designed to keep them within their effort limits as signaled by the production of angina pectoris, we have never felt surprised nor sufficiently curious when word came that an occlusion or fatal angina had occurred. From time to time, however, we have been impressed by cases with which we were closely concerned in which a coronary occlusion or death in angina immediately and dramatically followed unusual events. And we have been especially interested to note that in many of these instances the unusual events were preventable, cases A and D, for example.

CASE D—A man, formerly an oarsman, who noted angina on exertion four years before his death, had for several years stayed almost free from angina and had carried on with his

business effectively by adhering to a moderate regimen. Before a business trip he was examined and found to be in apparently very satisfactory condition. The second day away from home he was invited to luncheon at an athletic club. Immediately after luncheon, his host showed him a new rowing machine. He tried this so vigorously that he felt angina but continued the exercise in spite of this for a number of minutes, during which the angina increased. It continued to disturb him during an airplane trip in the afternoon, after dinner the angina grew worse. Coronary occlusion was diagnosed, the patient remained an invalid with increasing congestive failure until his death a year later.

Such cases have suggested to us that a careful investigation of events that immediately preceded coronary occlusion or fatal angina in suitable cases might furnish evidence that these disasters were often not haphazard and might serve to change the usual rather fatalistic point of view for the better.

Our records and hospital records, no matter how meticulously taken, have proved nearly always insufficient to supply the desired information. The family physician was sometimes able to supply it, but not infrequently the family physician believed and told us that the patient had done nothing unusual before the disaster,

#### *Significant Events that Preceded Fatal Angina or Coronary Occlusion in One Hundred Cases*

Nature of Significant Events	Times Occurring in 100 Cases
Unusual and violent physical exertion	24
Unusual physical exertion	31
Unusually prolonged usual exertion (including loss of sleep and rest) resulting in unusual fatigue	44
Persistence in activities which had repeatedly produced angina	6
Travel	33
Emotional strain	13
Alcoholic excess	5
Gorging	16
Starvation	3
Acute infection	6
Surgical operation	4
Medication	2
Suicide	1
Unusual sexual activities	1

when later questioning of a relative revealed extraordinary and often dramatic events. We have been forced nearly always to trace and interview directly the family of a deceased patient—a long task. In many cases, for various reasons we have been unable to obtain satisfactory data. It is not possible, because of inherent difficulties, to obtain definite figures on this point, but we judge that in not more than one case in five, when we were able to obtain satisfactory data, did such data fail to show significant information.

We have finally succeeded in obtaining sufficiently full and accurate records of the events that preceded a fatal angina, or an undoubted coronary occlusion fatal or not, in 100 of our private cases in which the information seemed to us sufficiently significant to warrant its consideration. In obtaining this information, we have been led to believe that fatal angina and coronary occlusion occurring in patients not previously severely disabled are not usually haphazard but are usually preceded by extraordinary departure from usual and reasonable habits of living. In the great majority of cases the departures from suitable living were easily preventable. In some cases, the preceding events were not easily preventable. It seems clear, however, that proper regimens, properly explained, with sufficient instruction of the patients would, if followed, have prolonged the lives of most of these 100 patients to an indefinite extent.

<sup>3</sup> Private consulting practice of Dr. B. E. Hamilton.

<sup>4</sup> Hyman, A. S. Postinfluenzal Angina Pectoris, J. A. M. A. 94: 1125 (April 12) 1930.

<sup>5</sup> It is well known, though we can find no clear statement of this supported by pathologic examinations, that it is not uncommon for patients who have angina to die in an attack without having had clear clinical evidence of occlusion and without occlusion being found at autopsy.

The data are too bulky to publish in full, but by classifying and enumerating the unusual significant events that have preceded fatal angina or coronary occlusion in each of the hundred cases, we have made the accompanying table. On the left are listed the significant events, on the right the number of times each event occurred in the hundred cases. Sixty-eight of the hundred cases had more than one of the listed significant events in the history.

#### UNUSUAL PHYSICAL EXERTION

Thirty-one patients had coronary occlusion or fatal angina directly following unaccustomed exertion, twenty-four others after unaccustomed exertion which could also be called violent. For a simple example

CASE 80—An elderly woman, who had had angina on exertion for two years but who had stayed well within her effort limits for many months, was drawn to her garden by the first warm day of spring. She worked steadily all morning and afternoon with shovel, rake and trowel. Directly after dinner she had a coronary occlusion.

In addition to gardening appear exertions unusual to the individuals making them, such as mountain climbing, rowing, changing a tire, pushing an automobile run out of gas, scraping a furnace, carrying heavy bundles, painting a boat or a room and ceiling, gunning, washing a large and active dog, and swimming.

CASE 88—A man aged 50 journeyed 150 miles to witness boat races, indulged in much alcohol, fell in the water, was helped out, watched the races, ran to his train and caught it but immediately had a coronary occlusion from which he did not recover.

We feel that if patients knew the variety of ordinary things that can be classed as violent exertion and that have caused disaster they would be better instructed. It seems that we should educate our patients with angina in the details of the daily life they should lead, having first learned ourselves what to tell them, just as we should instruct a diabetic patient in food values so that he can choose his diet in hotels, on journeys and on week-end parties, under any circumstances he may encounter, if we expect our patients to adhere to our plans.

#### PROLONGED ACTIVITY WITH FATIGUE

Unusually prolonged usual activity including loss of sleep and rest, resulting in unusual fatigue, constituted a situation that appeared in forty-four of the hundred cases. This group consisted of people who had angina on sufficient exertion but were able to carry on their usual activities without it. One case will illustrate.

CASE 49—A man the head of a contracting business for many years who, while holding to a moderate regimen, could tend to his daily work and ordinary customs of living without angina added exactly 50 per cent to his hours of work, discharged many of his helpers, added to the amount of walking during the day, and became conscious of greatly increasing fatigue. He was stricken while at work.

Others are more dramatic.

It has been recommended that we summarize our instructions to patients suffering from limitation of exertion by angina by telling them to "do what they can." The inference is that anything is permitted provided it does not actually produce angina. The group of patients who had fatal angina or coronary occlusion following usual exertion and activities not severe enough to produce warning angina but prolonged enough to cause unusual fatigue show that this instruc-

tion is wrong. It seems obvious that though a man with angina may safely walk 2 miles at a slow speed without producing angina, it does not follow that he can safely walk 20 miles, even if he does not increase his rate and does not produce angina while walking. Using angina on exertion as a warning signal, we should, of course, instruct our patients in their activities so that each one will be within his immediate limit as indicated by this warning. But we must also protect them against fatigue, even if they induce it by activity in itself insufficient to produce the warning. There is an endurance limit. The importance of insisting on regular hours of work and rest without curtailment of hours for sleep and the routine rest after meals (pointed out later) stands out clearly as essential in giving advice.

#### PERSISTENCE IN ACTIVITIES THAT HAD REPEATEDLY CAUSED ANGINA

The importance of advice to patients not to crowd themselves up to the point at which they feel angina is almost generally recognized, and this series emphasizes the need of it.<sup>6</sup> Angina produced by exertion, disappearing in a few minutes with rest, the disappearance hurried by glyceryl trimtrate, is not commonly a terrifying experience. It is commonly merely annoying. Many patients do not hesitate to push themselves up to the point of producing it many times a day unless they are warned. In our opinion, patients may be tacitly encouraged to continue this habit by being supplied with glyceryl trimtrate or other vasodilators to "take as needed." Six of our series were of this sort. Either from insufficient instruction or, more likely, since several physicians whom we knew have done the same things, because they held a fatalistic attitude toward their angina, they persisted in crowding themselves to the point of angina several times each day. They habitually used glyceryl trimtrate. Though several of the six were able to carry on for months or even several years, all eventually had a disabling occlusion or fatal angina, which came on while doing the things that ordinarily produced their angina. The use of glyceryl trimtrate in the cases that we have in mind ought to be confined to unavoidable situations. It should not be habitually used as a means of allowing the patient to exceed his natural limits without discomfort.

We have just seen a borderline but instructive case.

CASE 55—A well known physician, aged 62, a strong man, who loved and took vigorous exercise all his life, of late years mostly walking and golf, had for more than a year noted angina on exertion. For five months he had played golf by taking glyceryl trimtrate on the first tee before driving, again on the third tee and sometimes later in the game. He scorned any regimen that diminished his golf activity. One morning he drove to his summer home 175 miles. During three days he played golf, walked, washed his car and drove 150 miles. He considered that this was a period of loafing. The fourth day he entered a golf tournament. At the fifteenth hole angina began but he finished the last three holes before he gave up and collapsed. The angina continued for twenty-four hours and clear evidence of coronary occlusion followed. He is now recovering.

Golf in a sense deserves consideration among the specific dangers for patients with angina and appears as a clear factor in eight of our hundred cases. It seems absurd to us as we review these cases to allow a man, faced with complete disability or death, to continue golf.

<sup>6</sup> Kahn, M. H. Etiologic Factors in Angina Pectoris. An Analysis of 52 Cases. *Am. J. Med. Sc.* 172: 195 (Aug.) 1926. <sup>7</sup> Ober, William. The Pathology of Angina Pectoris. *Lancet* 1: 697 (March 12) 1910.

after he has had angina. We sympathize with the golfer. We admire and share the spirit which says, "If I cannot live like a man, I do not wish to live." But we deplore the fact that so many of our friends—and perhaps if it came to us we would be no wiser—are so devoid of ingenuity or resources that they cannot occupy their days with intellectual pursuits or artisanship or other hobbies that are safe, sufficiently to make them happy in spite of no golf. Every golfer knows the frequent temptations to violent exertion. To enumerate a few: inclement wind and weather, very frequent short but stiff climbs, getting out of the rough, climbing out of a trap, frequent hurrying because of the delay of unsatisfactory shots and following players. Persisting in golf after angina is perhaps comparable to persisting in eating candy after diabetes appears.

#### TRAVEL

More striking is the group of thirty-three patients who had taken long journeys immediately before their disaster.

CASE 12—A man traveled in his own car for twenty-four hours almost steadily, complained of fatigue, ate excessively, went to bed and had a fatal coronary occlusion.

CASE 27—A woman, free from angina on moderate restrictions, prepared for and took a thousand mile railroad journey involving loss of sleep, she ate heartily on her arrival and at the instigation of her daughter, immediately took a walk, which was no harder than she ordinarily accomplished without difficulty. While returning from the walk she was stricken with a coronary occlusion, which was fatal in ten days.

In no case was the journey itself believed to be the only factor. In the cases of twenty-one of those who took long journeys there was prolonged usual activity in preparation for or during the journey, with definite loss of sleep. But, again, in only six cases were prolonged journeys with prolonged exertion and loss of sleep the sole factors. For example, Clear overeating complicated eight of the cases in which long journeys had been taken. The others included such factors as violent exertion, indulgence in alcohol, and emotional strain. Journeys should not be preceded by fatiguing preparations, allowed to induce fatigue, or followed by continued activity, or they should not be taken. Regular hours for sleep, for meals and for rest after meals should be observed as rigidly by a patient with angina when away from home as should diet be controlled by patients with severe diabetes when away from their own table.

#### EMOTIONAL STRAIN

Unusual emotional strain appears as a factor that cannot be omitted in twelve of these hundred cases. John Hunter proved that he did not exaggerate when he said that his life was in the hands of any rascal who chose to worry him. We know of one contrasting patient.

A gentleman of the old school, famed for his easily aroused ire, found at the age of 70 that indulgence in bad temper caused him angina. He succeeded completely in controlling his disposition and lived for ten years in a forced good humor.

In three instances, coronary occlusion or fatal angina followed violent loss of temper during business arguments.

CASE 45—A physician, aged 62, was stricken at a wrestling match. He had been able to continue his profession successfully though living under close restrictions because of angina elicited both by exertion and by emotion. A veteran athlete, he was fond of watching boxing, wrestling and football but had for

many months avoided them because the excitement caused him angina. A particularly tempting wrestling bout made him break his rule and he died in his seat at an exciting period of the match. One of us watched from the balcony while his body was removed through the crowd.

Two patients had their attacks at football games. In one of these cases a long journey and loss of sleep were other factors. Three patients had coronary occlusions directly after bad news about a son. In one case the son had tuberculosis, in the second case the son contracted an unfortunate and undesired marriage, in the third case the son died. These were not the sole factors perhaps, nor can such factors be easily prevented. We know of another patient, not in this series, who had a coronary occlusion a few hours after news that a son had been detected in dishonesty.

Two patients stated emphatically that unaccustomed public speaking produced angina. Each patient said the speech was his first attempt. Loss of sleep and in one case prolonged unusual business activity were coincident factors. Each patient had just previously been promoted to an important executive position. In each case the angina was due to coronary occlusion. We know many people with chronic angina who are able to speak without difficulty and, in particular, one clergyman who speaks with great vigor yet who is unable to walk to his church and must climb to his pulpit slowly. Advice in this connection and in general must be carefully individualized, it is the degree of emotion aroused and the unusual character of an effort that must be valued if advice is to have merit.

#### ALCOHOLIC EXCESS

Alcoholic excess immediately preceded coronary occlusion or fatal angina in five cases. For example.

CASE 31—A man had for years made it his custom to retire for periods of about a week several times each year to a cottage, where he stayed by himself and drank almost without interruption. Only one person, a friend, knew of his alcoholic habits. Following the onset of angina on exertion, he took excellent care of himself for many months, when the desire for alcohol lured him to his cottage. He stayed drunk for a week, drove home (150 miles) and sent at once for his physician because of nervousness and a painful hemorrhoid. He was given gas-oxygen anesthesia, and the hemorrhoid was treated surgically. He remained in bed, awakened with angina four hours later, called his family, and died in a few minutes.

The factors in this case clearly include anesthesia if not surgical shock and a journey. But the whole picture is that of a man with easily controlled angina killing himself by a week of continued alcoholic indulgence.

#### GORGING

Clear overeating was a factor in sixteen of the whole series of a hundred cases. In three of the hundred, occlusion followed directly after an unrestrained gorging of food, with no other discoverable departures from customary living. In thirteen cases, excessive eating was associated with unusual and severe physical exertion or a journey. In many others, in which coronary occlusion or fatal angina was preceded by one or more clearly important departures from regimen, such as prolonged working and overexertion, and overeating was not listed as a factor, disaster actually occurred directly after a meal. For illustration.

A man would undertake some unusual exertion, such as removing storm windows and carrying them upstairs, tired from this, he would eat dinner and directly afterward be stricken. The hour directly after eating often proved the time for the onset of symptoms.



Rules immediately suggest themselves. First, the commonly given one, no exertion for an hour after a meal, second, the patient should never gorge, have three regular meals every day and not vary the quantity taken, third, if in spite of restrictions, the patient is forced into fatigue by prolonged work or journeys or loss of sleep, he should eat less than usual but should not fast.

#### STARVING

In one case doing without food appeared as a factor

CASE 19—A man, comfortable and functioning on light restrictions, did not eat during a heat wave because he had a notion that eating in very hot weather was harmful. He went to work as usual, except that he had no breakfast and perhaps felt a little tired, but he was without symptoms. On returning, he took a single glass of lemonade at 5 p. m., went to bed as usual at 10 p. m., and in a few hours awakened with angina, which proved fatal. He had taken nothing except one lemonade and water for about thirty hours.

CASE 71—The patient developed an occlusion during a rapid diet reduction and insulin administration for diabetes.

This is in accord with recorded experience.<sup>7</sup>

It is possible that starving was a factor in causing a coronary occlusion which followed an operation in case 95, in which occlusion occurred three days after operation. Starving again may well have been a factor in another group in which occlusion or fatal angina occurred during acute infection.

CASE 22—A man had an infectious diarrhea for five days during which he ate very little and died promptly of angina, probably due to an occlusion.

Somewhat similarly

CASE 46—A man spent a fortnight in bed with what was called "intestinal grip." He was given a highly restricted diet and died of coronary occlusion on his first day out of bed.

#### ACUTE INFECTION

In six cases, coronary occlusion or fatal angina occurred during, and apparently quite clearly as the result of, acute infections. In addition to the two just described (cases 22 and 46), patients 11 and 67 were doing well on moderately restricted regimens until acute infection of the upper respiratory tract occurred. In cases 61 and 20, of acute polyarthritis, coronary occlusion promptly developed. We have seen one other elderly man, not in this series, in whom an occlusion developed during rheumatic fever. Case 77 is included in the series of four cases in which fatal angina or coronary occlusion followed a surgical operation.

CASE 77—The patient was operated on (nephrectomy) twenty-one days before a coronary occlusion which proved fatal. An acute phlebitis with definite fever had been present for several days before the cardiac accident. The occlusion may well have been determined by this infection.

Seven cases closely associated with acute infections is a higher number than we would have expected in a series of 100 occlusions or fatal anginas occurring in patients not severely disabled previously. Our impression has been that such patients tolerated moderate infections well. We should regard acute infections in patients with angina as dangerous events.<sup>8</sup> It is likely that undertreating should be carefully guarded against during the illness.

<sup>7</sup> I. M. F. P. An Abstract of the Present Treatment of Diabetes Mellitus, 1935 (Aug. 29) 1931. Keet H. F. and Cravell, A. B. Angina Pectoris and Diabetes Mellitus. J. A. M. A. 96: 925 (Mar. 2, 1931).

<sup>8</sup> Keet H. F. A. Heart as a Link Between Angina Pectoris and Fatal Infection. A. M. M. 54: 5 (Jan. 1) 1931.

#### SURGICAL OPERATION

Four patients in this series were operated on, for good reason, but they had coronary occlusions, in three cases fatal, occurring from three hours to twenty-one days following the operation while they were still in bed. We will not elaborate on the danger of surgical operation<sup>9</sup> as a cause of fatal angina or coronary occlusion in patients with coronary disease whether or not the disease has previously signaled its presence by angina. We have had a fair number of patients with angina pectoris operated on successfully (the most common operation was prostatectomy) and have reported one case of angina complicated by exophthalmic goiter in which the angina itself was for a time markedly improved following the relief by surgery of the hyperthyroid symptoms.<sup>10</sup> We do not wish to give the impression that surgical operation is distinctly contraindicated by angina or coronary disease. These conditions add a small definite risk that must be valued. The danger from starving should be carefully avoided during convalescence from surgery in patients who are known to have or who are old enough to have coronary disease. Other factors, such as fatigue incident to preparing for and journeying toward a stay in the hospital, should be guarded against.

#### MEDICATION

Unusual medication appeared as a possible factor twice.

CASE 4—A man took large doses of thyroid extract to reduce his weight. He noted that his angina was more easily elicited but continued to take it. A long automobile ride to his summer home, followed by hill climbing, were the other factors.

Thyroid feeding is known to produce angina on exertion in some patients, usually elderly patients.<sup>11</sup> In some patients with angina, it has aggravated the angina. Cases of coronary occlusion promptly following its administration have been reported. Nevertheless, we have given it to a small number of myxedematous patients who had angina, the angina has been aggravated but the drug continued without disaster and with eventual improvement in all respects.<sup>12</sup> One cannot make a satisfactory rule. But one can recognize the added burden that thyroid feeding imposes on a patient who has angina and can warn a patient to note angina if it occurs for the first time after thyroid feeding, and protect the patient by reduction of activities with a suitable regimen.

CASE 79—The second patient, a woman, aged 70, had been troubled with very easily elicited angina for three years. For two days she took large doses of bromide to overcome sleeplessness and then slept for twenty-four hours. While still sleepy a few hours after rousing she had fatal angina.

The unusually prolonged sleep suggests that interference with eating habits in the direction of starving was another possible factor. We were prepared to find the administration of epinephrine as a factor in this series, but we did not.<sup>13</sup>

<sup>9</sup> Butler, Stuyvesant, Feeney, Neil and Levine, S. A. The Patient with Heart Disease as a Surgical Risk. J. A. M. A. 95: 85 (July 12) 1930.

<sup>10</sup> Hamilton, B. E. Congestive Heart Failure and Angina Pectoris. S. Clin. North America 6: 644-650 (June) 1926.

<sup>11</sup> Means, J. H., White, P. D. and Krantz, C. I. Observations on the Heart in Myxedema with Special Reference to Dilatation and Angina Pectoris. Boston M. & S. J. 195: 425 (Sept. 2) 1926.

<sup>12</sup> Ziskin, Thomas. Angina Pectoris Associated with Myxedema Heart, U. S. Vet. Bur. M. Bull. G. 24: 26 (Jan.) 1930.

<sup>13</sup> Cottrill, J. E. and Wood, F. C. The Effect of Epinephrine in Angina Pectoris. Am. J. M. Sc. 181: 36 (Jan.) 1931. Weiss, Edward. Fatal Coronary Occlusion Following Local Anesthetic. M. J. & Rec. 125: 61 (Jan. 29) 1931.



## SUICIDE

One patient in this series frankly committed suicide. Chronic disease is a large factor in suicide.<sup>14</sup> We know of one other among our angina patients, but there is a small suicide rate in angina.

## UNUSUAL SEXUAL ACTIVITY

Excessive sexual activity was recorded only once as a probable factor in this series.

CASE 1—In the case of an extraordinarily vigorous man, aged 71, it followed a long journey, loss of sleep, severe business efforts, excessive alcohol and gorging, and preceded another long journey over a period of forty-eight hours, when he paused because of a coronary occlusion, from which he recovered.

Questioning on this subject was not done in a routine manner because we feel that the difficulties in obtaining full information would not yield enough useful instruction to justify the effort and annoyance of collecting it. We may be mistaken. It is certain that many patients with angina continue their usual sex life without apparent harm, that departures from usual custom in the direction of violent exertion or prolonged fatigue are undesirable.

## DIAGNOSIS ERRONEOUSLY REVERSED

In at least two instances in this series, disaster followed resumption of forbidden activities because the patient had been reassured by a physician that he had nothing wrong with him. The outstanding example is presented by case 15.

CASE 15—A man, aged 50, had had angina on exertion for six months. Free from angina on restrictions for several months, he applied for life insurance and was told that his heart was perfectly sound. He hurried to his office and told his business partner the good news. To celebrate, they both ate heartily and indulged in alcohol freely, whereupon the patient was seized with fatal angina.

## ANGINAS OR CORONARY OCCLUSIONS IN PHYSICIANS

Thirteen of the hundred fatal anginas or coronary occlusions occurred in physicians. In seven instances, the event occurred while on vacation, or during the twenty-four hours after the physicians had returned from a vacation and were extraordinarily busy with accumulated work. Three more had their disaster at the conclusion of a week end or directly after returning from week-end trips. Overeating, long journeys without sufficient time for food and rest, fatigue, or unaccustomed, prolonged or frequently repeated physical exertion occurred almost constantly. In each of these cases, as we have had the story, preventable, unimportant excesses, clearly unjustifiable in terms of happiness, stand out.

## SUMMARY

From private consulting practice we have selected a group of patients within a whole series classifiable under coronary disease associated with angina pectoris, namely, patients otherwise without disability who have angina pectoris on exertion or excitement but are able to carry on without angina while adhering to a reasonable regimen.

We have found that such patients, when they die, usually die in angina or following a coronary occlusion. More often than not, such fatal anginas or coronary occlusions were immediately preceded by unusual departure from ordinary habits of living, and these departures were usually preventable.

We have analyzed the events that constituted departures from ordinary habits of living and that have preceded coronary occlusion or fatal angina in a series of 100 selected cases. This analysis furnishes material for improved regimens which should be useful in avoiding or postponing coronary occlusion and fatal angina.

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## HOW DO REST AND COLLAPSE TREATMENT CURE PULMONARY TUBERCULOSIS?

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The basic principle in the treatment of tuberculosis in all its forms is rest. In tuberculosis of the lungs or of the joints the physician endeavors to obtain as complete a rest as possible of the diseased organs. More especially in pulmonary tuberculosis, complete and prolonged bed rest is advised in order to "immobilize the lungs" and "favor healing by fibrosis." During the past years, a number of surgical procedures have been adopted for reinforcing rest by mechanical splinting of the diseased lung, as pneumothorax, phrenic exeresis or thoracoplastic collapse.

It is peculiar, however, that very little investigation has been done so far on the physiologic action of this mode of treatment. It is thought that by rest fibrous tissue develops both in the joints and in the lungs and that the lesions are encapsulated in a fibrous shell, bringing its development to a standstill, or that "nature" is helped in its efforts toward the healing of the wound by allowing the scar tissue, a delicate and fragile structure at the beginning, to become solid and more resistant. This is about all that is found in the literature.

These explanations might be sufficient for clinical purposes but they cannot stand a more inquisitive scrutiny. Why and how does pulmonary tuberculosis improve when an efficient collapse therapy has produced anatomic closure of the cavities? Why within a few weeks after successful thoracoplasty does the sputum, which was loaded with tubercle bacilli before operation become negative and the patient put on 10, 20 and 30 pounds in three or four months? Furthermore, what explanation have the aforementioned theories to offer for the spontaneous closure of large cavities, even without treatment by rest? Lastly, by what mechanism does rest favor fibrosis of the lung?

A clinical and experimental study of this interesting question has been carried on for the past two years in the pulmonary tuberculosis services of Metropolitan and Sea View hospitals and in the Department of Surgical Research of Cornell Medical College. The results of this work, still being carried on, have been given in detail elsewhere.<sup>1</sup> I shall give here only a summary of the results and of my conception of the physiologic mechanism of "rest" of the lung based on them.

Acid-fast bacilli in general, and more especially virulent human or bovine tubercle bacilli, not only are strict aerobes but they need a large amount of oxygen for continuation of life and growth. It has been calculated that an equivalent weight of cultures of human tubercle bacilli (H 37 strain) consumes about three times more oxygen than the muscle of a dog at rest.

<sup>14</sup> Stearns, A. W. Suicide. *New England J. Med.* 204:911 (Jan 1) 1931.

<sup>1</sup> Coryllos, P. N. Importance of Atelectasis in Pulmonary Tuberculosis. *Am. Rev. Tuberc.*, to be published.

(Novy and Soule,<sup>2</sup> Loebel, Shorr and Richardson<sup>3</sup>) Furthermore, if these cultures are deprived of oxygen, as when the air in the culture is being replaced by a neutral gas such as nitrogen, the respiratory metabolism of the bacilli falls to zero within from six to eight days. In three instances, cultures could not be obtained by Loebel, Shorr and Richardson<sup>3</sup> when oxygen starvation had been prolonged. Another point of importance is that tubercle bacilli cannot derive the energy necessary for continuation of life from anaerobic processes, for energy supplied to them in that way could have been only 1 and 2 per cent of the amount furnished by oxidation in Long's medium in air.<sup>4</sup>

These facts certainly have great clinical importance. In fact, if for any reason conditions of anaerobiosis are created in a tuberculous area of the lung or of any other organ, tubercle bacilli could not continue to thrive and grow. The lesion will remain stationary and then regress, the amount of bacilli and their toxic products will rapidly decrease.

Do such conditions of anaerobiosis ever develop in the lung and, if they do, under what circumstances? Do they occur in the tuberculous lung? What is their mechanism and what are the proofs of their existence?

In previous experimental work Dr Birnbaum and I<sup>4</sup> have shown that, when a large bronchus is obstructed, the air entrapped in the territory of the lung corresponding to that bronchus will be completely absorbed. That the absorption of oxygen under these conditions may be complete is shown by the development in the atelectatic portions of the lung of strict anaerobes, as in the case of experimental putrid abscesses of the lung. It is a well known fact that only by obstructing the bronchus after injection into it of material with facultative or strict anaerobes can an anaerobic abscess develop.<sup>5</sup> Patchy or lobular atelectasis will follow obstruction of the small bronchi, provided collateral ventilation<sup>6</sup> has been suppressed by previous inflammatory thickening of the interalveolar septums.

It is well known that pulmonary tuberculosis, more than any other disease of the lung is accompanied by curly and marked bronchial lesions. Paegel and Henke have described several forms of tuberculous bronchitis. Every one of them, exudative, caseous or proliferative, may produce bronchial obstruction leading to atelectasis. An important number of clinical cases of atelectasis in tuberculosis have been reported lately. Jacobaeus,<sup>7</sup> Packard,<sup>8</sup> Gatterdam,<sup>10</sup> Korol,<sup>11</sup>

and others have proved beyond any doubt that the majority of the so-called fibrotic lungs really are or have been atelectatic lungs. They have also insisted on the fact that in atelectatic lungs the evolution of tuberculosis seems to be far more benign and its prognosis far better than in nonatelectatic cases.

Of still greater importance is the application of these facts to the development of tuberculous cavities. A cavity is a hole in the lung, a loss of substance, produced by the elimination through the bronchi of the caseous necrotic material. A cavity, naturally, communicates with a bronchus by a more or less tortuous outlet, which often is visible in the roentgenogram, it gives the cavity a tennis-racquet form. I gave to these cavities the name of stem cavities.

The importance of this "draining bronchus" of the tuberculous cavity, completely overlooked thus far, is to my mind of paramount importance. First, it explains the peculiarly spherical form of the cavities in the living individuals, whereas on the autopsy table they are irregular in shape.<sup>12</sup> In fact, the difference in pressures inside and outside the cavity (atmospheric inside and negative outside) gives a physiologic and mechanical explanation of this spherical shape. Secondly, these "draining bronchi" have, I believe, a great bearing on the evolution of the cavity. In fact, three courses may be followed by these bronchial outlets, first, they may remain open, second, because of pathologic narrowing of their lumens they may allow ingress of air during their respiratory expansion and prevent egress of air during their expiratory collapse, producing a one-way-valve mechanism, third, they may become obstructed.

In the first case, in which the cavity remains in free communication with the bronchial tree, the number of bacilli in the sputum is considerable and the danger of spreading is always present. Gas analyses made by us on air specimens taken by puncture through the chest wall showed that the air contained in these cavities has a composition almost identical with that of bronchial air (oxygen 17 per cent, carbon dioxide, 0.7 per cent.<sup>13</sup>) The pressures in these cavities oscillated between  $-1$  and  $+1$  cm of water, as in the bronchi.

In the second case when a one-way-valve mechanism is produced, the cavity increases rapidly in size, and the pressure within it becomes positive ( $+3$  cm of water in one case), the percentage of oxygen decreases (15 per cent) and the amount of carbon dioxide increases (2.5 per cent), this is due to the fact that gas exchanges in the cavity are more advanced, because of the more difficult renewal of the air in them.<sup>13</sup> Dr G. G. Ornstein, in whose tuberculosis service at the Metropolitan Hospital this investigation is now being carried on, made the remark that these cavities increase rapidly in size without any apparent change in their walls, as though they were inflated by the accumulation of air and that during expiration the mediastinum is displaced toward the healthy side. In other words, one is dealing here with the development of an "obstructive emphysema" in the cavity.

In the third case, when the "draining bronchus" of the cavity becomes obstructed, the air contained in the cavity will be absorbed by the same mechanism as in

<sup>2</sup> Novy F. G. and Soule M. H. Microbic Respiration. II Respiration of the Tubercle Bacillus. *J. Infect. Dis.* 36: 168 (Feb.) 1925. These authors terminate their paper by the following words: "The rest cure and rich diet in checking the progress of the disease probably act by reducing to a minimum the available O<sub>2</sub> supply in the tissues."

<sup>3</sup> Loebel R. O., Shorr E. and Richardson H. B. The Respiratory Metabolism of the Tubercle Bacillus. 26th Meeting of the National Tuberculosis Association, 1930.

<sup>4</sup> Coryllos P. N. and Birnbaum C. I. Obstructive Massive Atelectasis of the Lung. *Arch. Surg.* 16: 501 (Feb.) 1928. Bronchial Obstruction. *Am. J. Roentgenol.* 22: 401 (Nov.) 1929. Alveolar Gas Exchanges and Atelectasis. *Arch. Surg.* 21: 1214 (Dec. part 2) 1930. Studies in Pulmonary Gas Absorption in Bronchial Obstruction. *Am. J. M. Sc.* 193: 317-326 (March) 1932.

<sup>5</sup> Allen D. S. *Principles of Medicine of the Lung*. 1930.

<sup>12</sup> Coryllos P. N., Alexander Hanns. Zum Problem den tuberkulösen Kaverne. *Ztschr. f. Tuberk.* 56: 1 1930. Laueril Hugo. Ein Beitrag zur Deutung der sogenannten Ring-schatten in den Lungen. *Acta. radiol.* 10: 72 1929.

<sup>13</sup> Coryllos P. N., Kosterwitz Harry and Levine E. R. The Clinical Application of Gas Analysis in Artificial Pneumothorax. *Am. Rev. Tuberc.* 26: 1-3 (Aug.) 1932.

sight and smell were apparently all normal. There was no nystagmus, nor was there any evidence of cerebellar disturbance in the gait, which, though uncertain, was about what one would expect in an individual who is quite weak.

The red cells now numbered 3,145,000, the leukocytes 9,560 and the eosinophils 3 per cent. Examination of urine showed nothing of interest. The spinal fluid was normal and the blood Wassermann reaction was negative. Coagulation time and bleeding time were within normal limits. A diagnosis of chronic encephalitis and Banti's disease was made. The consultant in neurology at first concurred in the diagnosis of chronic encephalitis but soon afterward made the diagnosis of Wilson's disease. The patient was transferred to a neurology service with this diagnosis and after several weeks of suffering as a result of the tetanic contractions of the muscles of the upper extremities and the back, he became progressively weaker and died, March 10. An autopsy was done.

## AUTOPSY

The pathologic observations were typical of hepatolenticular degeneration, of which Wilson's disease is one form. The liver was an excellent example of advanced atrophic cirrhosis. The spleen was greatly enlarged, was slate blue, and its capsule was smooth and glistening. On section, the splenic pulp was a deep purplish red and very friable. When the skull was opened, considerable edema was found. The ventricles were found to contain a slightly increased amount of fluid. Sections through the columnar and lenticular regions of the brain showed a marked increase in glial cells and fat droplet cells. The only other abnormal condition was an acute congestion of the pulmonary alveoli.

## COMMENT

In most cases reported heretofore, symptoms of disease of the liver have not been marked, the advanced cirrhosis found at autopsy being quite unexpected. There is usually a marked disproportion between the hepatic symptoms during life and the hepatic changes revealed at autopsy. The case here reported apparently differs from most others in that the hepatic disease had produced symptoms and signs unmistakably referable to the liver for four years before the nervous disturbance began to draw to itself a great deal of attention. Furthermore, in this case death occurred a relatively short time after the appearance of the nervous disturbance. This case seems to justify the opinion of Barnes and Hurst that the cirrhosis of the liver is the result of repeated attacks of hepatitis rather than a slowly progressive degenerative process, certainly this patient had several exacerbations and remissions of the hepatic disease. The "chills" described in the histories of the case probably were spastic rigors. The eosinophilia seemed to be constant throughout the history of the case. No cause for it could be determined, and it was therefore concluded that it probably depended on the main disease process itself. The patient showed no corneal pigmentation, but no specialized methods for discovering this phenomenon were employed. The gastric hemorrhage was undoubtedly a result of the cirrhosis of the liver, but whether the hemorrhagic diathesis that developed later in the disease was also a part of the hepatic purpura or whether there may at times be an element of splenic purpura associated with the disease is a matter of conjecture. It would seem, however, that the hepatic disturbance was sufficient to explain the bleeding gums.

The etiology of this disease is unknown. Nothing was discovered in the study of this case that excited as much as a suspicion.

Attempts are being made at the present time to have complete studies carried out on the surviving children of the patient's family.

## SUMMARY

In a case of hepatolenticular degeneration, the hepatic portion of the clinical picture predominated, whereas in most cases reported the nervous manifestations have been the more pronounced.

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## THE EXCRETION OF NONPROTEIN NITROGEN SUBSTANCES BY THE INTESTINE

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The excretion of water by the intestine has long been recognized as a useful therapeutic procedure, but little emphasis has been placed on the substances excreted with the liquid. The action of the saline cathartics is generally regarded as being due to the large amount of liquid that is abstracted from the blood through the intestinal mucosa by the hypertonic solution. Likewise, the more powerful purgatives are believed to cause excretion of a large amount of liquid which resembles the content of the small intestine and, as Cushny<sup>1</sup> states, these substances "have been hurried through the bowel too rapidly to permit of their being taken up by the epithelium."

The quantity of liquid that is normally poured into the small intestine every day by the various glands and organs of digestion and usually reabsorbed amounts to several liters, according to Meyer and Gottlieb,<sup>2</sup> and the composition of the diarrheic stools, according to Hay,<sup>3</sup> approaches very closely that of normal intestinal juice as to organic and inorganic solids. The liquid feces produced as a result of saline cathartics has a content of nitrogen and chlorine approximately equal to that of the succus entericus, according to Meyer and Gottlieb.<sup>4</sup>

In the treatment of anasarca, ascites and dropsy in which elimination through the bowel is generally desired, the quantity of water removed in the stools is quite commonly believed to be of prime importance, although Christian<sup>5</sup> minimizes the value of this method of treating cardiac edema. Few authors mention the composition of the fluid thus excreted, but von Noorden and Ritter<sup>6</sup> found an increased percentage of nitrogen in the feces of patients with chronic nephritis, and in the diarrheic stools of uremia the former author<sup>7</sup> noted an increased amount of nitrogen, a considerable portion of which was ammonium salts.

It has been known for a long time that an appreciable amount of urea can be eliminated in the sweat, saliva and gastric juice of patients with uremia and anuria following urinary obstruction. This "vicarious elimination" has been stressed by Myers<sup>8</sup> in long standing

From the John McCormick Memorial Institute for Infectious Diseases.  
1 Cushny, A. R. *Pharmacology and Therapeutics or the Action of Drugs*, ed. 6. Philadelphia: Lea & Febiger, 1915, pp. 88-89.

2 Meyer and Gottlieb. *Experimental Pharmacology*, Henderson, Philadelphia, J. B. Lippincott Company, 1926, pp. 216-217.

3 Hay, Matthew. *J. Anat. & Physiol.* 16 and 17, 1884.

4 Meyer and Gottlieb. *Experimental Pharmacology*, pp. 218-219.

5 Christian, H. A. *Digitalis Effects in Chronic Cardiac Cases with Regular Rhythm in Contrast to Auricular Fibrillation*, *Tr. A. Am. Physicians* 37: 284-298, 1922.

6 von Noorden and Ritter. *Untersuchung über den Stoffwechsel Nierenkrankheiten* *Ztschr. f. klin. Med.* 19: 1971 (suppl.) 1891.

7 von Noorden. *Carl Metabolism and Practical Medicine*, Chicago, W. T. Keener & Co. 2: 439-440, 1907.

8 Myers, W. A. *Long Standing Anuria*, *J. A. M. A.* 56: 1198-1201 (April 17) 1926.

anuria, and this observation has been confirmed by McEnery, Meyer and Ivy<sup>9</sup> in experiments on gastric secretion in experimental nephritis. Likewise, Polland, Roberts and Bloomfield<sup>10</sup> were able to determine quantitatively the amount of nitrogen in gastric juice after histamine stimulation, and in similar studies Martin<sup>11</sup> established normal values for the various nonprotein nitrogen constituents of gastric juice and noted increased values in gastric carcinoma and nephritis. Steinitz<sup>12</sup> also found that nonprotein nitrogen can be eliminated by the stomach and duodenum and that the concentration in the gastric juice and duodenal contents may be several times that in the blood in cases of renal insufficiency. In comparing the concentration of rest nitrogen in the saliva and duodenal juice of normal persons with that of patients with uremia, Scherk<sup>13</sup> observed a marked increase in the latter condition, but there was little difference in the nitrogen eliminated in the feces of the two groups. Ascoli and Licci,<sup>14</sup> however, demonstrated that the stools of patients with a uremic diarrhea may contain from 5 to 6 Gm. of nitro-

comparing the diarrheic stools of patients suffering from pellagra with those of normal controls, Myers and Fine<sup>17</sup> found that 15 per cent of the total output of nitrogen (urine and feces) was eliminated in the feces of the patients with diarrhea, whereas only 10 per cent of the total was excreted in the stools of the controls.

That the question of excretion of nitrogen by the intestine is controversial is well illustrated by the conflicting statements by Peters and Van Slyke<sup>18</sup> in their discussion of this subject. These authors express the opinion that "stool nitrogen represents not unabsorbed nitrogen but rather nitrogenous products excreted or secreted by the bowel," and "in nephritis, even with high blood nonprotein nitrogen, the stool nitrogen remains normal unless diarrhea develops", but they state further (p. 312) "It is doubtful whether measures aimed to promote elimination of fluid by extra-renal channels are of any benefit." Nitrogen excreted by the bowel is not to be considered in the usual sense as metabolic nitrogen. Other than these

Analysis of Specimens from Sixteen Patients with Various Diseases

	Urea Nitrogen			Ammonia Nitrogen			Nonprotein Nitrogen			Uric Acid			Creatinine			Sugar Average per Cent	Blood Chemistry			
	Maxi mum	Mini mum	Average	Maxi mum	Mini mum	Average	Maxi mum	Mini mum	Average	Maxi mum	Mini mum	Average	Maxi mum	Mini mum	Average		Urea Nitro gen	Non protein Nitro gen	Uric Acid	Creat inine
Uremia 3 patients	14.50	1.42	5.45	05.2	6.16	43.3	09.5	22.2	67.3	3.72	1.69	2.72	7.95	1.80	3.50	0.013	77.6	102.1	9.40	3.90
	23.12	10.48	18.70	96.3	42.4	65.1	116.7	60.4	97.5	5.00	3.32	4.33	22.5	13.9	17.2		133.6	183.1	8.80	12.8
	16.70	4.57	7.14	112.4	19.5	74.9	110.0	55.2	90.7	7.53	6.05	7.00	21.4	12.5	16.1		93.6	142.5	8.30	5.35
Average			10.43			61.1			85.2			4.68			12.3		101.6	142.6	8.86	7.35
Chronic nephritis, 4 patients	10.62	7.94	13.25	73.1	22.8	47.9	102.1	25.2	49.9	4.1	2.7	3.0	2.60	1.29	1.80	0.020	17.0	38.7	3.12	1.29
	11.48	1.00	6.52	59.7	11.4	36.2	75.7	10.4	46.5	4.2	1.5	2.5	4.32	1.09	2.90		68.3	80.7	7.03	3.66
	10.08	1.08	5.56	160.0	23.1	101.1	348.0	82.5	203.7	3.5	2.3	3.1	3.30	2.10	2.70		19.9	39.6	3.16	1.40
			5.24			14.4			28.6			2.0			2.60		19.1	39.9	4.42	1.61
Average			7.39			49.9			82.9			2.88			2.51		31.3	51.2	4.45	1.90
Chronic myocarditis, 6 patients	4.90	3.00	3.55	18.0	14.3	16.4	41.7	30.5	36.1			3.50			2.10		0.1	27.6	3.73	1.35
	4.20	2.01	3.13	18.5	19.0	18.4			35.2			3.60			2.20		42.4	62.4	6.68	1.67
	0.85	1.12	4.22	28.4	2.1	16.1	57.9	49.8	53.8	4.69	1.72	3.70	1.70	1.50	1.50		19.1	36.9	4.81	1.37
	17.33	5.74	10.55	22.2	4.3	12.6	72.0	27.9	46.4	4.50	3.20	3.80	2.61	1.49	2.20		13.5	31.5	3.76	1.55
	7.38	1.36	4.02	54.9	3.5	22.3	60.3	15.7	41.8	7.30	1.90	3.50	3.30	2.20	2.60		20.3	41.5	3.68	1.74
			2.44			6.8			15.8			3.50			2.30		14.7	32.4	4.94	1.86
Average			4.70			23.10			33.2			3.7			2.17		10.8	38.7	4.60	1.59
Normal kid ney function 3 patients			0.02			18.0			35.6			2.3			2.03	0.025	12.5	28.5	2.51	1.45
			2.43			6.8			12.9			1.7			1.51	0.031	0.8	27.1	2.30	1.29
			3.64			16.6			23.3			1.3			1.50	0.026	10.5	20.9	2.40	1.40
Average	0.02	2.43	4.03			13.3			24.03			2.1			1.61	0.029	10.0	27.52	2.40	1.33

gen daily. Brown<sup>15</sup> states that the amount of nitrogen thus eliminated in uremia may reach 8 Gm. daily. The similar eliminatory function of the large intestine as to dextrose, sodium chloride and urea has been pointed out by Grigaut and Richet<sup>16</sup> who state that approximately one third of the urea eliminated after being intravenously injected as a hypertonic solution was excreted by the bowel. These authors state that Claude Bernard was the first to call attention to this function of the bowel after ligation of the ureters in dogs. In

reports, no mention is found in the literature regarding the quantitative excretion of nonprotein nitrogen substances in the feces.

This study was carried out for the purpose of demonstrating the quantitative elimination of the various nonprotein nitrogen metabolites and sugar in the stools of patients afflicted with various diseases and under treatment in the hospital. The method consisted in the administration by mouth of one ounce of magnesium sulphate in hot water on a fasting stomach and the collection of the liquid feces by rectal tube or in the bed pan when free from urine. Elaterin and compound powder of jalap were also used as the cathartics in some instances. The liquid stool thus obtained was centrifugated at high speed for several minutes to remove any solid material and the supernatant liquid used for analysis.

The urea and ammonia nitrogen was determined by aeration both before and after digestion with urease.

17 Myers A. C. and Fine M. S. The Relative Importance of the Intestine and Kidneys as Excretory Channels. *Proc. Soc. Exper. Biol. & Med.* 16: 73-74, 1913-1919.  
18 Peters J. P. and Van Slyke D. D. Quantitative Clinical Chemistry. Baltimore, Williams & Wilkins 1: 269-270, 312, 1931.

9 McEnery E. T., Meyer Jacob and Ivy A. C. Studies on Nephritis. II. Gastric Secretion in Nephritis. *J. Lab. & Clin. Med.* 1: 1362-169 (Jan.) 1927.  
10 Polland W. S., Roberts A. M. and Bloomfield A. L. The Chloride Base and Nitrogen Content of Gastric Juice After Histamine Stimulation. *J. Clin. Investigation* 3: 611-637 (June) 1928.  
11 Martin J. J. Total Nitrogen and Nonprotein Nitrogen Partition of Gastric Juice Obtained After Histamine Stimulation. *Bull. Johns Hopkins Hosp.* 19: 280-301 (Nov.) 1931.  
12 Steinitz Hermann. Elimination of Nitrogen by Stomach and Duodenum. *Klin. Wchnschr.* 1: 57 (July 1) 1928.  
13 Scherk, Gerhard. The Elimination of Excreta Matter by the Digestive Tract in Nephritis. *Klin. Wchnschr.* 6: 2432-2434 (Dec. 17) 1927.  
14 Ascoli and Licci quoted by van Noorden. *Metabolism and Practical Medicine* 4: 439.  
15 Brown W. L. The Factor in Uremia. *Proc. Roy. Soc. Med.* (Sect. 1) 16: 19 (March) 1923.  
16 Grigaut A. and Richet C. Fonction éliminatrice de l'intestin. *C. R. Acad. Sci. Biol.* 7: 143-145 (Jan. 27) 1912.

solution, as in Van Slyke and Cullen's<sup>19</sup> modification of Marshall's urease method

The other nonprotein nitrogen constituents were determined on a filtrate prepared by a modification of the Folin-Wu<sup>20</sup> precipitation, in which an increased amount, from one and one-half to two volumes of the two-thirds normal sulphuric acid, was added to obtain maximum precipitation and the mixture allowed to remain in the icebox for an hour or two to insure a clear filtrate. In a large majority of instances a satisfactory filtrate was obtained, but occasionally when the feces contained a considerable amount of magnesium sulphate a turbidity interfered with the estimation of the nonprotein nitrogen, and the result was not recorded. The feces obtained following the use of elaterin was satisfactory in such instances and the constituents were similar in amount. The Folin-Wu methods generally were followed for the various substances in the filtrate, and for uric acid the silver lactate precipitation procedure was employed. The analyses for sugar were completed within an hour after the specimen was obtained, and the filtration was carried out in a refrigerator to lessen glycolysis as much as possible.

All analyses made on eighty-eight specimens of liquid feces obtained from sixteen patients having various diseases and the averaged results for each patient are summarized in the accompanying table.

The sixteen patients are classified into four groups according to the disease that was predominant. For the three patients with uremia, the averaged values for urea nitrogen were as follows: maximum, 18.70 mg per hundred cubic centimeters, minimum, 5.45 mg, and the average of the group, 10.43 mg. For ammonia nitrogen the corresponding figures were 99.3, 6.16 and 61.1 mg, for nonprotein nitrogen, 116.7, 22.2 and 85.2 mg, for uric acid, 7.0, 1.69 and 4.68 mg, for creatinine, 22.5, 1.80 and 12.3.

The four chief nonprotein nitrogen containing substances of the blood are also recorded in the table for comparison, and the averages are: blood urea nitrogen, 101.6 mg per hundred cubic centimeters, nonprotein nitrogen, 142.6 mg, uric acid, 8.86, and creatinine, 7.35 mg. It can be seen readily that whereas the amount of urea in the liquid feces of these patients is much less than the amount in the blood, the amounts of nonprotein nitrogen and uric acid compare favorably and the amount of creatinine in the stool is actually in excess of that in the blood. Perhaps the low values for urea may be explained by the ease with which intestinal bacteria convert urea into ammonia, and it will be noted that more than 70 per cent of the nonprotein nitrogen of the liquid feces is ammonia.

The group of patients who had chronic nephritis without uremia had values as follows: Urea nitrogen maximum, 19.62 mg per hundred cubic centimeters, minimum, 1.96 mg, average, 7.39 mg. Ammonia nitrogen maximum, 160 mg, minimum, 11.40 mg, average, 49.9 mg. Nonprotein nitrogen maximum, 348.0 mg, minimum, 10.4 mg, average, 82.9 mg. Uric acid maximum, 4.2 mg, minimum, 1.5 mg, average, 2.88 mg. Creatinine maximum, 4.32 mg, minimum, 1.09 mg, average, 2.51 mg. The average values of the four constituents of the blood of these patients were: urea nitrogen, 31.3 mg per hundred cubic centimeters,

nonprotein nitrogen, 51.2 mg, uric acid, 4.45 mg, and creatinine, 1.99 mg.

There were six patients with chronic heart disease, i. e., chronic myocarditis alone or in association with chronic valvular disease as the predominant condition. The values in the liquid stools of these patients were: Urea nitrogen maximum, 17.33 mg per hundred cubic centimeters, minimum, 1.12 mg, average, 4.75 mg. Ammonia nitrogen maximum, 54.9 mg, minimum, 3.45 mg, average, 23.15 mg. Nonprotein nitrogen maximum, 72.0 mg, minimum, 15.7 mg, average, 38.2 mg. Uric acid maximum, 7.3 mg, minimum, 1.72 mg, average, 3.7 mg. Creatinine maximum, 3.3 mg, minimum, 1.49 mg, average, 2.17 mg. In the blood, the urea nitrogen averaged 19.8 mg per hundred cubic centimeters, the nonprotein nitrogen, 38.7 mg, the uric acid, 4.6 mg, and the creatinine, 1.59 mg.

The averages for the group of three patients, two with diabetes and one with cirrhosis of the liver but with normal kidney function, were: For the feces urea nitrogen, 4.03 mg per hundred cubic centimeters, ammonia nitrogen, 13.8 mg, nonprotein nitrogen, 24.93 mg, uric acid, 2.1 mg, and creatinine, 1.61 mg. For the blood urea nitrogen, 10.9 mg per hundred cubic centimeters, nonprotein nitrogen, 27.5 mg, uric acid, 2.40 mg, and creatinine, 1.38 mg.

The average percentage excretion of sugar in the liquid feces of the two patients with diabetes was 0.026, whereas that in three patients (one with nephritis, one with cirrhosis of the liver and one with uremia) was 0.019.

#### COMMENT

From a comparison of these averages it can be observed that there is a considerable increase in the concentration of the nonprotein nitrogen metabolites eliminated in the liquid feces of the patients with uremia and in those having chronic nephritis without uremia, in chronic myocarditis there is a moderate increase of these substances over that in the normal group. Roughly, these values parallel the concentration of the same substances in the blood with the exception of ammonia, which is probably largely formed from the urea. Of the various substances, creatinine exhibits the most marked increase in the patients with uremia. Since in many instances several hundred cubic centimeters of liquid fecal material was passed daily, it can thus be seen that an appreciable amount of nonprotein nitrogen is excreted in the stools. In a few specimens the concentration of nitrogen in the stool was greater than in the blood, but in the majority of analyses it was less, as seen in the averages. These results support the idea of "vicarious elimination" when there is a demand created by a "piling up" of the nitrogenous metabolites in the blood. Also from the results, experimental evidence is presented which supports the clinical observations of the value of the saline cathartics and hydragogues in the treatment of chronic nephritis and chronic myocarditis.

There was sufficient sugar present in the stools of five patients to be measured by Folin's method, and the concentration was slightly greater in the two patients with diabetes, although neither of these had a blood sugar above 0.20 per cent.

#### CONCLUSIONS

1. Appreciable amounts of the nonprotein nitrogen metabolites are eliminated in the stools by purgation.
2. The higher the concentration of nonprotein nitrogen in the blood, the higher is the concentration in the liquid feces.

<sup>19</sup> Van Slyke, D. D., and Cullen, G. E. A Permanent Preparation of Urease, and Its Use for Rapid and Accurate Determination of Urea, *J. A. M. A.* 62: 1558 (May 16) 1914.

<sup>20</sup> Folin, Otto, and Wu, Hsien. *J. Biol. Chem.* 38: 81 (May) 1919.

- 3 The therapeutic efficacy of vigorous catharsis and purging is supported by experimental evidence
- 4 An appreciable amount of dextrose can be detected in the feces

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## WOHLFAHRTIA MYIASIS IN NORTH DAKOTA

### REPORT OF TWO CASES

G D GERTSON, M D  
GRAND FORKS, N D

W E G LANCASTER, M D

G A LARSON, M D  
FARGO, N D  
AND

G C WHEELER, Sc D  
GRAND FORKS, N D

The genus *Wohlfahrtia* belongs to the dipterous family Sarcophagidae, most of whose larvae live in decaying flesh. The larvae of *Wohlfahrtia*, however, appear to breed only in living tissues. W magnifica Schiner has been found in wounds of man and animals in Europe and Africa. Prof E M Walker<sup>1</sup> of the University of Toronto reported several cases in which the larvae of *Wohlfahrtia vigil* (Walker) burrowed under the skin of infants. 1 A two weeks old infant had twelve lesions on the front of the neck and arms and also on the palms and chest. 2 An infant, aged 8 weeks, had fourteen lesions on the front of the neck and chest and on the anterior surface of the arms. 3 A 5 months old infant had lesions on the left side of the neck under the angle of the jaw, and one on the left cheek (this case was also reported by Brady<sup>2</sup>). 4 Twelve or fourteen lesions (probably caused by this species) were found on the front and right side of the neck and on the anterior surface of the right forearm of an infant aged 3 weeks.

Felt<sup>3</sup> has reported living maggots provisionally identified as *W. vigil* from a conjunctival cyst of an adult. Sanders<sup>4</sup> recorded *Wohlfahrtia vigil* myiasis involving the neck of a 3 months old infant. Knowles<sup>5</sup> reported the case of a 9 months old infant involving the neck and arm. Chown's<sup>6</sup> case of a 3 months old infant involving the neck, ear, chest and popliteal space was diagnosed clinically as *Wohlfahrtia vigil* myiasis.

Washburn<sup>7</sup> has recorded small larvae of *Gastrophilus epilapsalis* French under the skin of an infant. Dr Aldrich thinks that they were probably *W. vigil*. There is, however, a record by Miller<sup>8</sup> from Casselton, N D, of a case of "creeping eruption" of the left forearm due to *Gastrophilus hemorrhoidalis* L.

Shannon<sup>9</sup> has reported finding a rabbit in which death resulted from infection by a large number of maggots of *vigil*. Mr C T Greene added the following note to Shannon's: "Two muscid larvae received from the Bureau of Animal Industry for identification and which proved to be a species of *Wohlfahrtia*, either *vigil* or *meigeni*, were taken at Dunkirk, Mont., Sept 8, 1922, from the back of an Airedale puppy six days' old." Johannsen<sup>10</sup> found a larva in a rabbit which was probably not more than a week old. Recently Dr Aldrich has identified an adult reared from a larva found under the skin of a young mink at a fur farm, Austin, Minn.

Dr Aldrich writes in a letter: "I collected the adult of the species at Lake Metigoshe, Turtle Mts, North Dakota. The species ranges from Nova Scotia to North Dakota, or rarely farther, but west of the Rocky Mountains it seems to be replaced by a form in which the shining black spots on the abdomen are much smaller, most of the surface being occupied by the gray pollinose portion. This has been called *Wohlfahrtia meigeni* Schiner, agreeing with the European species, but I suspect that it is only a color form of *vigil*, which is the older name."

Mr Neal Weber has recently (June 14, 1931) collected a damaged specimen of *Wohlfahrtia meigeni* Schiner (determined by Dr Aldrich) at Towner, N D. It was being dragged to their nest by workers of the thatching ant, *Formica rufa obscuripes* Forel.

### REPORT OF CASES

CASE 1—June 18, 1931, one of us (G D G) was called to attend an infant aged 4 months, living on a farm near Grand Forks. A hard, red mass was noted just above the base of the penis and slightly to the right of the midpubic region. That evening a small "punched-out hole" appeared in the center of this area. The following morning the area was larger and there was considerable indurated swelling involving the pubic area of the abdomen and the entire penis. On the evening of the second day a second "punched-out hole" was noted on the penis just distal to the base. It was filled with a small black plug. The condition appeared to be a typical lymphangitis and the plug was thought to be necrotic. Hot packs were prescribed. June 22, a larva was found on the dressing and a bloody discharge exuded from the upper wound. Chlorotorm irrigations and mercurochrome instillations were used and hot packs were continued. The condition cleared rapidly.

June 22 the larva was sent to the Biological Laboratory of the University of North Dakota, where it was placed on dry soil in a small petri dish, which was kept at room temperature. After wandering for some time on and in the soil, it finally became quiet. During the night of June 24-25 it pupated. The imago appeared on July 7. It was noticed at 4:45 p m, presumably a short time after eclosion, for the wings had scarcely begun to expand. After thirty minutes the wings were fully expanded. The fly and its puparium were sent to the United States National Museum, where they were identified by Dr J M Aldrich as *Wohlfahrtia vigil* (Walker).

CASE 2—June 19, 1931 about 9 a m a woman living in Fargo telephoned that her 8 months old baby girl had a "sore eye." From her description over the telephone we thought that it was probably conjunctivitis and suggested boric acid solution and mild silver protein. About noon the same day she requested that we call and examine the eye, as it seemed to be getting worse.

She stated that in the morning she had first noticed two small areas on the upper lid like a sty—small, grayish white elevations near the free margin of the lid. Redness and swelling had increased rapidly during the forenoon. Little weight was placed

1 Walker E M. *Wohlfahrtia vigil* as a Human Parasite (Diptera: Sarcophagidae). J Parasitology 7: 17 (Sept.) 1920. Some Cases of Cutaneous Myiasis with Notes on the Larvae of *Wohlfahrtia vigil* (Walker) and *W. magnifica* (Schiner). Arch. Pediat. 10: 658-660 (Sept.) 1923.

2 Brady M J. Cutaneous Myiasis. Arch. Pediat. 10: 658-660 (Sept.) 1923.

3 Felt E P. New York State Mus. Bull. 260 pp. 46-54. 1925.

4 Sanders H C Jr. Myiasis Dermatoses. New England J Med. 190: 38 (July 5) 1924.

5 Knowles T K. Cutaneous Myiasis. Colorado Med. 22: 309-310 (Sept.) 1925.

6 Chown C. Report of a Case of Cutaneous Myiasis in an Infant. W. J. Surg. 19: 14 (Oct.) 1914.

7 Washburn F I. *Gastrophilus epilapsalis* French. Canad. Ent. 25: 200 (1913).

8 Miller H W. Creeping Eruption—Report of a Case. Journal. 43: 15 (Dec. 15) 1920.

9 Shannon R C. Nonhuman Host Records of *Wohlfahrtia* (Diptera). Proc. Ent. Soc. Washington 23: 142 (1923).

10 Johannsen O A. *Wohlfahrtia vigil* as a Parasite on Rabbits. J Parasitology 13: 156 (Dec.) 1926.



on her statement that movement under the skin had been noted. The same treatment was continued. That evening she again reported that the eye appeared much worse and was entirely closed.

The condition did not seem to cause the child any great discomfort. She slept well that night and showed no toxic or systemic manifestations. The next morning the mother found matter and blood smeared about as though the skin had perforated and some drainage had taken place, and at noon she reported that a small worm had emerged from one of the lesions.

On examination we found that the edema had progressed to the point at which the palpebral fissure was completely closed. The globe appeared normal in every way. The conjunctival sac was congested but did not contain pus.

The edema was limited to the upper lid and tear sac areas, suggesting an acute dacryocystitis with hordeolum of the upper lid.

The lesions had localized, assuming a pustular appearance. The centers were translucent and pale yellow. The lesion on the upper lid was about 4 mm from the margin of the lid, centrally located, and the other squarely over the tear sac area.

We found both pustules broken, and larvae were plainly in view. With fine forceps we removed two larvae from the upper lid and one from the lesion over the tear sac area. They were very motile, white and apparently 6 or 8 mm in length. The heads appeared considerably darker. The specimens were brought to Prof J A Munro, state entomologist at North Dakota State College, Fargo, N D. Professor Munro placed the maggots on fresh liver and reared them almost to maturity. Being called away, he forwarded them to Dr F C Bishop, principal entomologist in charge of insects affecting man and animals, Bureau of Entomology, Washington, D C, who sent the following report:

"These prove to be *Wohlfahrtia vigil*. This species, as you probably know, has been taken from pustules on the faces, necks and shoulders of children on several occasions. It has also been reared from cottontail rabbits. It appears to be the Northern species and probably has a considerable number of hosts."

Improvement was rapid. By night the swelling had so decreased that the eye was half open, and by the following morning it appeared almost normal.

#### COMMENT

A search of the literature has failed to reveal another identified case of *Wohlfahrtia vigil* myiasis involving the adnexa of the eye. It is probable, however, that the larvae may develop on any exposed area of skin on which eggs are deposited by the fly.

The reported cases in man have all been in infants or young children. The importance of protection to children sleeping outdoors is obvious. Knowles<sup>1</sup> suggests the possibility of the larvae as disease carriers, particularly in connection with the epidemiology of poliomyelitis.

Our cases were both in infants and occurred at approximately the same time, June 18 and 19, 1931. The case reported by Knowles occurred June 6, 1923. Chown's case occurred June 27, 1924. Two of Walker's cases occurred in June, 1919, and another in June, 1921. Sanders' case came under his care in June, 1922. It is interesting to note that nearly all the reported cases have occurred in June. The natural inference is that the species *Wohlfahrtia vigil* is most liable to select the human being as its host during that month. This observation we believe to be of sufficient importance to pass on to mothers for their guidance in the protection of their children from flies during the month of June.

#### SUMMARY

1 Infection of the human being with larvae of *Wohlfahrtia vigil*, although rare, occurs in North Dakota.

2 Reported cases indicate that it is mainly infants or young children that are infected.

3 Prevention may be attained by adequately protecting the child during its outdoor sleeping hours, especially during the month of June.

## BILATERAL CERVICAL CHORDOTOMY

FOR RELIEF OF PAIN IN CHRONIC  
INFECTIOUS ARTHRITIS

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AND

SAMUEL S. ALLEN, MD

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High cervical chordotomy has been performed for the past few years following Foerster's demonstration that pain and temperature fibers cross over immediately or at most ascend one segment before crossing over to form the spinothalamic tract. Foerster<sup>1</sup> advocated section of the spinothalamic tract as high as the second cervical segment and was the first to produce a unilateral analgesia nearly to that dermatome. This has proved to be an important contribution to Spiller's operation.

Bilateral chordotomy in the upper cervical segments should not be performed because of the danger of respiratory paralysis. The phrenic nerves arise chiefly from cells in the fourth cervical segment. The exact location of the tracts descending to these cell bodies is unknown. Theoretically, at least, edema following section of the anterolateral tracts might involve these descending fibers or the phrenic cells in the anterior horns as well as the motor tracts of the intercostal muscles, resulting in respiratory failure.

In several communications Foerster<sup>2</sup> has warned against bilateral, high cervical chordotomy. He has, however, performed it in one case, but only following failure of a unilateral section to relieve symptoms. In this case Foerster felt that the first operation might have in some way protected the tracts from edema subsequent to the second, necessarily more radical, procedure.

The case that we present called for control of pain in both lower extremities and, in addition, the right arm and shoulder. The pain was abolished without risk of respiratory paralysis by sectioning the tract at the third cervical segment on one side and approximately the eighth cervical segment on the other. This produced the greatest area of analgesia in any patient of the series of seventy on whom anterolateral chordotomy has been performed in this clinic. Foerster's case is the only one in the literature we have found in which a greater area of analgesia has been obtained.

*History*—R. P., a man, aged 20, admitted to the University Hospital, complained of severe pain, swelling and limitation of motion of the joints. The onset three years before was gradual and at first involved only the hips and lower part of the back. The patient was able to be about but suffered much discomfort. About a year later, he experienced pain and swelling in the right knee and noticed that the joint was becoming stiff. Shortly afterward the left knee became involved,

From the Department of Surgery, University of Michigan Medical School.

<sup>1</sup> Foerster, O. and Gagle, O. Die Vorderseitenstrangdurchschneidung beim Menschen. Ztschr f d ges Neurol u Psychiat 138 192, 1932.

<sup>2</sup> Foerster, O. Personal communications to the authors.

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and this was followed by involvement of the ankles, the right shoulder and the right temporomandibular joint. He was forced to take to his bed, where he remained until the present time. The pain was so severe that he dreaded the slightest movement. His appetite was poor, he lost weight rapidly and became severely emaciated. His past illnesses consisted of the usual diseases of childhood. He denied any venereal infection, and he had never had any infections of the upper



Fig 1—Osteoporosis and loss of joint space.

respiratory tract except for an occasional cold. His health had always been of the best until the onset of the present illness.

**Examination**—The patient was severely emaciated and was seen lying quiet in bed. There were no stigmas of deviation, the patient was intelligent and cooperated well. The pupils were equal and regular, and reacted to light and in accommodation. The teeth were in good condition and the tonsils had been removed. Hearing was normal and there was no tenderness over the mastoid region. There was no evidence of cervical adenopathy. Careful examination of the lungs revealed nothing abnormal. The heart was of normal size

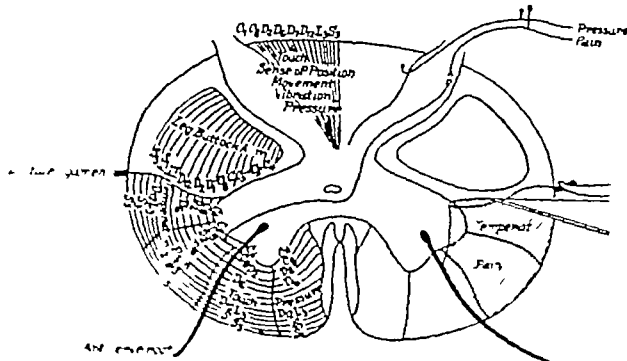


Fig. 2—Schematic drawing showing incision of the upper cord. (Modified from Peester)

with the apex beat in the fifth inter-space at the midclavicular line. The sounds were clear, the rhythm regular and there were no murmurs. Motion of the right shoulder caused pain. There was marked limitation of motion of both hips almost to the point of ankylosis and also considerable limitation of motion in both knees. Attempts at passive motion of these joints caused excruciating pain. Both knee joints were also extremely enlarged. The patella was not movable on the femur in a flexion or extension. The serum calcium was 11.5 mg per 100 c.c. of the serum, the inorganic phosphates 4.0

Roentgenograms demonstrated a slight irregularity in the superior anterior margins of the body of the sixth cervical vertebra. There was marked irregularity and slight increase in density about the sacro-iliac joints. There was also a slight increase in bone production. The bones of the pelvis showed an osteoporosis. There was a generalized loss of joint space on both hips and some irregularity of the heads of both femurs (fig 1). The distal ends of the femurs and the upper ends of the tibiae also showed a marked osteoporosis. There was a loss of joint space of both knees.

**Operation**—Five weeks after admission, a bilateral lumbar sympathectomy and ganglionectomy was done. Two months following operation, there was little if any improvement in the joints of the lower extremities. Since the pain continued as severe as ever, chordotomy was advisable.

Under tribrom-ethanol anesthesia, a cervical laminectomy was performed by one of us (S S A), the spines and laminae of the second to the seventh cervical vertebrae being removed. The posterior roots of the fourth and fifth nerves on the right side and of the fourth nerve on the left were divided. The cord was then easily rotated by grasping the dentate ligament

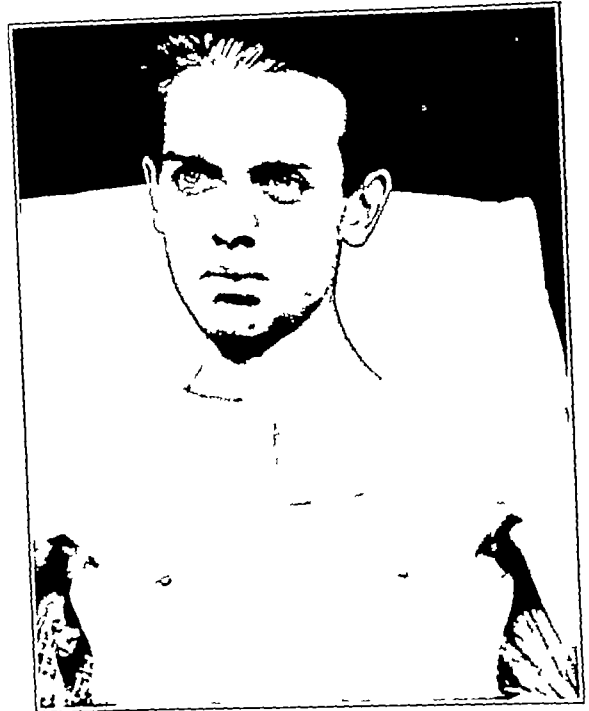


Fig 3—Level below which pain and temperature sense is lost.

At the third cervical segment on the left side an incision 5 mm in depth was made into the anterolateral column of the cord, extending from the dentate ligament to the emergence of the anterior nerve root (fig 2). On the right side a similar section of the cord was made at the eighth cervical segment, but was only 4 mm in depth. The level of the loss of sensations of pain and temperature is shown in figure 3. No area of total anesthesia could be demonstrated.

Following operation the patient was completely free from all pain except at the site of the incision. An indwelling catheter was placed because of urinary retention. He was soon able to be moved with no discomfort whatever. Two weeks after operation he was up in a wheel chair, the first time he had been out of bed in over a year. Physical therapy was now commenced and he tolerated the brine bath perfectly. The bladder was functioning normally at the end of five weeks.

He was discharged three months after operation on long, double upright braces and was walking with crutches. He occasionally complained of slight pain in the left shoulder.

#### SUMMARY

The extensive area of analgesia obtainable at one operation without danger of respiratory paralysis is demonstrated by this case.

## MASSIVE ANAPHYLACTIC GANGRENE

ARTHUS PHENOMENON

H E IRISH, M D

CHICAGO

AND

E C REYNOLDS, M D

BERWYLL, ILL

This form of reaction occurring in sensitized subjects has been known since Arthus<sup>1</sup> in 1903 reported his experiments. He attributed it to the release of antibodies which seem able to bring about all those degrees



Fig 1—Anaphylactic gangrene, rear view twenty eight days after first injection, nineteen days after fifth injection

of tissue response to insult commonly known as inflammation. Previously Koch in 1891 had described the difference in the reactions to injections of live or killed tuberculosis bacteria in normal and tuberculous animals. He pointed out that in the tuberculous a dose that is not sufficiently large to kill "an animal often produces an extensive necrosis of the skin in the neighborhood of the site of the injection." Pirquet later called this altered response of tissue in the tuberculous "allergy."

The mechanism of this spectacular result was not attributed to vasomotor spasm but to contact of antigen and antibody at the site of injection by Valy Menkin,<sup>2</sup> who, after numerous experiments, wrote "I demonstrated that a non-specific acute inflammatory reaction is capable of arresting a foreign protein at the site of injection. For this reason it is probable that the fixation of antigen in Arthus' phenomenon is largely due to the acute inflammatory reaction brought about by the contact of antigen and antibody in the tissues."

"Opie<sup>3</sup> pointed out that it is unnecessary to assume that the tissues have undergone any essential alteration as the result of sensitization. 'Acute inflammation in response to a specific irritant, namely, Arthus' phenomenon, occurs when the antigen concerned and its antibody meet within the tissues.' This conclusion was reached by reversing the usual procedure. A normal animal received 10 cc of horse serum intravenously. On the following day, 0.5 cc of strong antihorse serum from an immunized rabbit was injected into the skin. Extensive inflammatory edema (the Arthus phenomenon) occurred at the site of injection, whereas none

followed the injection of normal rabbit serum. Opie viewed the anaphylactic inflammation in which the antigen is fixed at the point of entry as an apparent paradox between susceptibility to injury and the resistance of immunity. With the anaphylactic inflammation the vital organs are protected at the expense of local injury."

"In a recent review, Nordmann<sup>4</sup> criticized Opie's interpretation of the Arthus phenomenon. Nordmann maintained that ordinary inflammatory phenomena such as are experimentally produced by the simultaneous injection of two serums into a normal animal do not show the gradually increasing severity of symptoms that is the characteristic feature of the Arthus phenomenon. It is clear, however, that this gradual change in severity of symptoms in anaphylactic inflammation may be to some extent, though not entirely, correlated with the increase in precipitin during the process of immunization. Nordmann insisted that physiologic alteration plays an important rôle in the development of the Arthus phenomenon. He says 'We conclude, therefore, that the cause of the final necrosis following the later injections in the Arthus experiment is due to the ability of the arteries to become accustomed to the serum and that in consequence of this adaptation they are less and less altered by additional injections of the antigen.' Although it is perfectly natural that physiologic changes should accompany the anaphylactic inflammation, it is doubtful whether this author has demonstrated that the particular changes in the arteries influence the development of the anaphylactic inflammatory reaction. The studies of Opie indicate that this reaction is brought about by the contact of antigen and antibody at the site of injection. An inflammatory reaction of unusual intensity occurs and this reaction doubtless brings to the site of inflammation plasma containing more precipitin. This view is in agreement with facts recently demonstrated by myself [Menkin], namely, that foreign proteins from the circulating blood



Fig 2—Side view

stream accumulate in an inflamed area. The initial anaphylactic inflammation is intensified and this may account for the gradual increase in the severity of the symptoms of Arthus' phenomenon."

Two cases of gangrene<sup>5</sup> have been reported. Both followed the use of diphtheria antitoxin in persons sensitized by toxin-antitoxin eight and four months

1 Arthus, M. M. *Compt rend Soc de biol* 55 817 1903  
2 Menkin, Valy. *J Exper Med* 52 201 (Aug) 1930  
3 Opie, E. L. *Tubercle* 7 23 (Oct) 1925

4 Nordmann, Martin. *Physiol Rev* 11 41 (Jan) 1931  
5 Gatewood, W. E. and Baldrige, C. W. *Tissue Hypersensitivity Following the Administration of Toxin Antitoxin* J. A. M. A. 88 1068 (April 2) 1927. Tumpeer, I. H. Matheson, Abe, and Straus, D. C. *Arthus Phenomenon in a Syphilitic Child*, *ibid* 96 1373 (April 25) 1931.

previously The site in these cases, as in our case, was in the buttocks, but one patient also had an area in the arm

The case reported here followed five injections of antimeningococcic serum into the buttocks nineteen months after the use of toxin-antitoxin

#### REPORT OF CASE

The following history was given by the parents A boy, aged 28 months, was delivered normally, and had jaundice during the first week of life with "spasm of the stomach" and pro-



Fig 3—Front view

jectile vomiting He was breast fed for seven months He had mumps, sore throat and otitis media at 6 months, the cervical glands remaining enlarged He was given cod liver oil for a touch of rickets and powders at 20 months for a coarse voice due to "thyroid" At 11 months he had three doses of toxin antitoxin He never had eczema, hives or any rash, hay fever or asthma at any time At the age of 1 year he was vaccinated The mother said that the child became violently nauseated and vomited at the sight or smell of such foods as stew or goulash He was normal in behavior, mentality and weight

The present illness began March 17, 1931, with fever, vomiting sore throat and headache He continued to be ill A painful rigidity of one side of the neck with holding of the head to one side was interpreted as meningitis April 1, without a diagnostic lumbar puncture, meningococcic serum was injected into the right buttock The quantity was not known by the parents April 2 the injection was repeated in the left buttock and again on April 3 in the right buttock No anaphylactic reactions were observed An injection in the left buttock, April 7, was followed by a blanching of the skin at the site of injection Within an hour urticaria appeared over the entire body, with edema of the face which closed the eyes The child became irrational and there was a fever of 103 F This condition persisted about three days, when he became rigid for fifteen minutes and complained of severe cramps in the abdomen On the same day April 11, he was again given an injection in the left buttock, after which blanching and soreness were almost immediately noted Within an hour the site became purple On the following day April 12, a fifth injection was given in the right buttock with a similar reaction in one hour These areas continued increasingly purple swollen and tender April 13 the swelling had extended over and around the left side of the abdomen and there was fever varying from 99 to 103 F The swelling had increased by April 14 but the patient appeared improved and asked for food At this time several large blebs described as being the size of a silver dollar (38 mm.) appeared over both buttocks, with purple discoloration over the right anterior thigh Two days later the areas became dark and the swelling subsided Four days later a bloody watery discharge appeared and the areas on the buttocks became black as contrasted to the normal skin It was at this time that the patient was first seen by one of us Examination revealed gangrenous areas with discharge

and sloughing in both buttocks, sides of the abdomen and thighs There was an area of pneumonia in the right lower lung and left otitis media There was no cervical rigidity nor sign of meningitis The child had fever and appeared very sick The Wassermann reaction was negative, the blood and urine were of no especial interest No pus cavities formed, but two large masses of necrotic tissue were lifted out

Despite antiseptics, surgical drainage and the performance of three blood transfusions, the patient became progressively weaker and died twenty-one days after admission No autopsy was obtained

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## Clinical Notes, Suggestions and New Instruments

### XANTHOMA DIABETICORUM AN EARLY CASE

R. B. MORELAND M.D. SOUTH BEND, IND

AND

V. J. DARDINSKI, M.D., WASHINGTON, D. C.

Xanthoma diabeticorum may be described as being a rare skin disorder occurring in glycosuric or diabetic individuals, usually in adult males, the skin lesions consisting of reddish, reddish yellow or orange papules, measuring from 0.5 to 2 cc., distributed chiefly over the extensor aspects of the arms, legs and buttocks, discrete and usually in not great numbers The skin lesions develop suddenly

This condition was first described in 1851 by Addison and Gall Since that time other cases have been reported and further research undertaken to clear up the subject of faulty fat metabolism and this disorder associated with it As recently



Fig 1—Distribution of lesions on arm Sept 11 1931

as 1922 Moore<sup>1</sup> reported a typical case in a girl, aged 14 years who died in two months In his report he states that the disorder is rare One year later, Major<sup>2</sup> reported four

<sup>1</sup> Moore, James Xanthoma Diabeticorum, Brit. M. J. 2 1176 (Dec. 16) 1922.  
<sup>2</sup> Major, R. H. Xanthoma Diabeticorum M. Clin. North America 7 1059 1060 (Jan.) 1922.

cases seen over a period of five months, indicating, of course, that the disorder in reality is not so rare.

The exact cause of the dermatosis is unknown. It occurs in association with a disturbance of fat metabolism. Fatty degeneration and cholesterol and other lipid deposits are present in many of the lesions, especially those that have existed for some time. Wile,<sup>3</sup> in a study of lipids in xanthoma, found

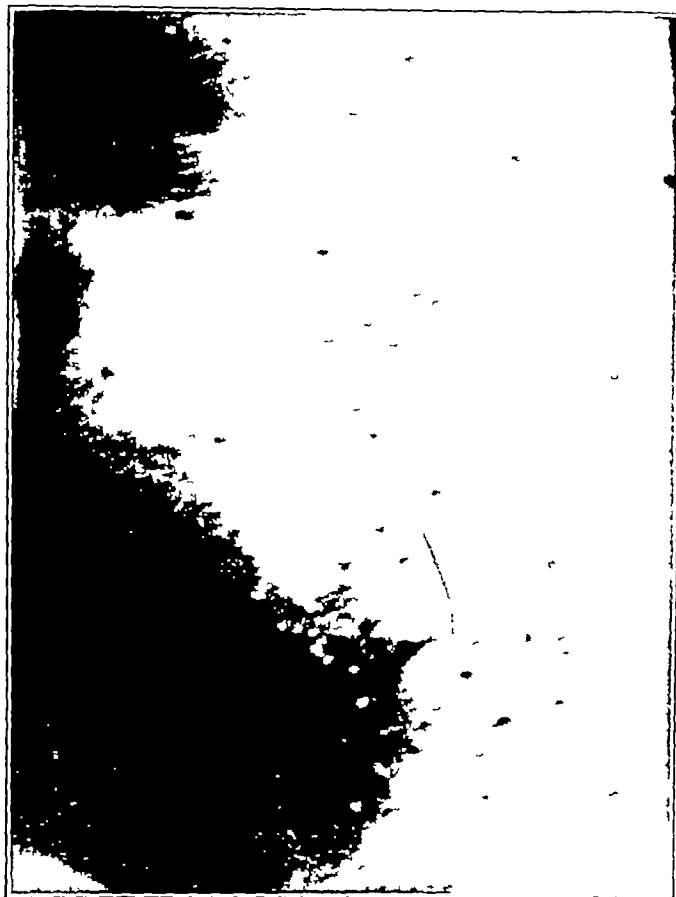


Fig 2—Lesions on hip Sept 11 1931

the cholesterol in normal epithelium to be from 15 to 20 per cent of the total lipids, while in xanthoma lesions it constituted only 1.5 to 2 per cent of the total lipids present. In other words, the cholesterol proportion of the total lipids in the lesions was only 10 per cent of that found in normal epithelium. Wile found a closer relationship existing between xanthomatous lesions and the total circulating lipids, as the degree of lipoidemia increased, the cutaneous lesions increased in number and size, while as the circulating lipoids decreased, the tendency was for the cutaneous lesions to regress. He also found that a high caloric diet affected the cutaneous disorder adversely, while lowering the caloric intake often resulted in improvement. Fat intake, aside from its caloric value, has no effect, since the fat intake has no relationship to the circulating lipids.

Our deductions, from the foregoing, are that the condition is due not only to faulty cholesterol metabolism and deposit but to a disorder in other fat metabolism as well, although just how is not yet worked out. Hyperglycemia is considered a contributory cause by upsetting the normal fat metabolism.

A case of xanthoma diabeticorum of twelve years' duration was reported by Azer<sup>4</sup> in a man, aged 45. Dietary measures, alone, caused the condition to improve greatly in four weeks, some lesions having completely disappeared. A short time later the condition completely cleared up. When the patient returned to a high caloric diet, the lesions returned.

Engman and Weiss,<sup>5</sup> in reporting a case in a white man, aged 23, state that several months is required before lesions involute under dietary regulation alone. In their case, treated

with insulin, lesions were involuting on the seventh day, two months later the condition had cleared up completely.

The following case presents several features of interest.

#### REPORT OF CASE

**History**—An automobile salesman, aged 24, married, seen Sept 11, 1931, had an eruption of an erythematous nature on the penis. About two weeks before he had made a short trip into the country, during which time he had slept on the ground. He thought it was ivy poisoning and used a lotion, which, he thought, had helped it for a time. A few days later, however, from eight to ten days before he was seen, another type of eruption developed on his arms, legs and buttocks.

His past history revealed nothing of any consequence except that he had had mumps two months before, from which he had quickly recovered, without complications. He stated, however, that during the preceding six weeks his weight dropped from 225 pounds to 190 pounds (from 102 to 86 Kg) in spite of the fact that he ate much food and drank large quantities of water. Urination, which was frequent and copious, was associated with some burning. He had no muscular weakness. His skin itched a little at times, although not distressingly. There was no history of any familial disease.

**Examination**—The patient was rather obese but presented nothing abnormal aside from the skin disorder. The foreskin of the penis was swollen and erythematous, the immediately underlying scrotum was also quite irritated and had the appearance of being affected with an acute dermatitis. The ivy poisoning was then suspected to be due to glycosuria.

An entirely different type of skin disorder presented itself on the extensor surfaces of the extremities and on the buttocks. It was roughly symmetrical and consisted of papular lesions from 0.25 to 1 cm in diameter, with perhaps half that elevation. They varied from pinkish to red, appearing therefore



Fig 3—Section showing subepithelial fibrosis and cellular infiltration. Reduced from a photomicrograph with a magnification of 170 diameters.

inflammatory. The skin surrounding the papules seemed normal, excepting immediately adjacent to the lesion, where a little hyperemia could be seen. The lesions were discrete and totaled in all probably 100 to 120. The face, hands and feet had no lesions and none were found on the body except immediately adjacent to the shoulders and buttocks. In a few of the larger lesions, which had been first to appear, by careful inspection a faint yellowish tint could be observed. Within a

<sup>3</sup> Wile U. J., Eckstein H. C., and Curtis A. C. Lipid Studies in Xanthoma. Further Contributions. Arch. Dermat. & Syph. 20: 489-500 (Oct.) 1929.

<sup>4</sup> Azer, M. Xanthoma Diabeticorum. Brit. M. J. 1: 665 (April 12) 1924.

<sup>5</sup> Engman, M. F. and Weiss, R. S. Xanthoma Diabeticorum Treated with Insulin. Arch. Dermat. & Syph. 8: 625 (Nov.) 1923.

# XANTHOMA—MORELAND AND DARDINSKI

week's time after the first observation all the lesions had assumed this yellowish orange color, which also seemed to deepen gradually.

**Laboratory Examinations**—A specimen of urine, September 11, showed 3+ sugar. As the patient stated that he had eaten little that day, this seemed all the more significant.

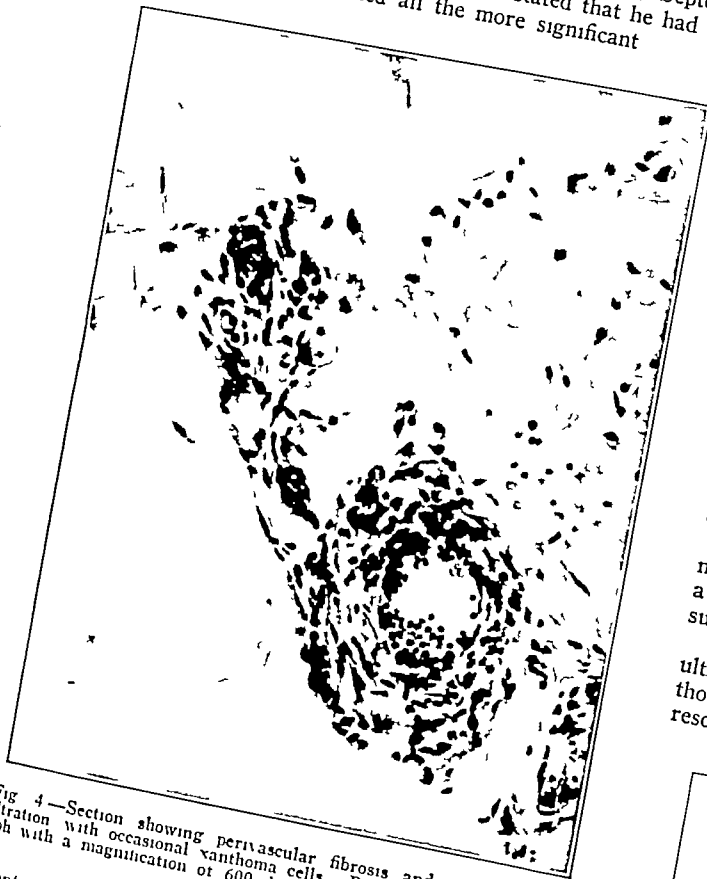


Fig 4—Section showing perivascular fibrosis and small round cell infiltration with occasional xanthoma cells. Reduced from a photomicrograph with a magnification of 600 diameters.

September 12 the urine presented 3+ sugar. Diacetic acid was present, albumin absent. The fasting blood sugar was 312 mg per hundred cubic centimeters. The blood serum was cloudy, indicating lipodemia, though an actual determination was not made.

September 14 a biopsy of the lesion from the right arm was made. In the center of the specimen of skin was a firm, yellowish brown, elevated nodule projecting above the surface of the skin for about 1 mm. It measured 25 mm in diameter. Section through the nodule revealed it to be brownish and 2 mm thick, extending into the skin but it did not appear beneath the layers in the subcutaneous tissue. The urine was free of sugar and diacetic acid.

September 16 the blood sugar was 128 mg. The urine was normal. The penile irritation had subsided. Dextrose tolerance was determined to be approximately 80 Gm.

September 29 the blood sugar was 117 mg. The urine was normal. The skin lesions were regressing.

October 5 the urine showed 2+ sugar. The diet was abandoned the day before.

October 6 the urine was normal. Regular urinalyses made later were negative for sugar.

Microscopic examination revealed the epidermis to be of normal thickness with an occasional papillary projection which seemed thicker than normal. There was a much thicker layer of keratinized epithelial cells lying on the surface than is normally seen. The cells of the epidermis did not appear to be abnormal in any way. The papillary reticular layers blended together in the layer appeared to be thicker than normal. In this layer of the derma the blood vessels were of normal size and were surrounded by a loose layer of fibrous material in which were many small round nuclear cells.

Occasionally could be seen in the neighborhood of these vessels a large pale cell the nucleus of which was small and located either in the center or in the periphery. These cells were not numerous but were undoubtedly the "foam" type of cell, or xanthoma cell, that is characteristic of this lesion. The smooth muscle bundles appeared to be hypertrophied and also contained a few mononuclear cells around them.

Sudan III, pyridine, Turnbull's blue, and Mallory's ammonium sulphide and potassium ferricyanide stains failed to bring out anything that was not recognized with the hemalum and eosin stain.

The pathologic diagnosis was xanthoma diabeticorum, early lesion.

The early lesions of xanthoma diabeticorum show an increase of subepithelial connective tissue and some mononuclear infiltration but very few xanthoma cells or "foam" cells. If one does not look for this type of cell carefully, one might easily miss the diagnosis.

**Treatment and Course**—Dietetic management, after the method of Joslin, was used. Fasting periods of from one to three days promptly rendered the urine sugar free and reduced the blood sugar to normal limits. After the patient's carbohydrate tolerance had been determined, a maintenance diet was allowed.

Almost one month after treatment was instituted, abandonment of his diet for one day and overindulgence in food caused a recurrence of glycosuria. Fasting one day rendered the urine sugar free.

The only treatment given locally was a few exposures of ultraviolet rays to produce only a slight reaction. It being thought that this local stimulation and hyperemia might hasten resolution and absorption of the lesions.

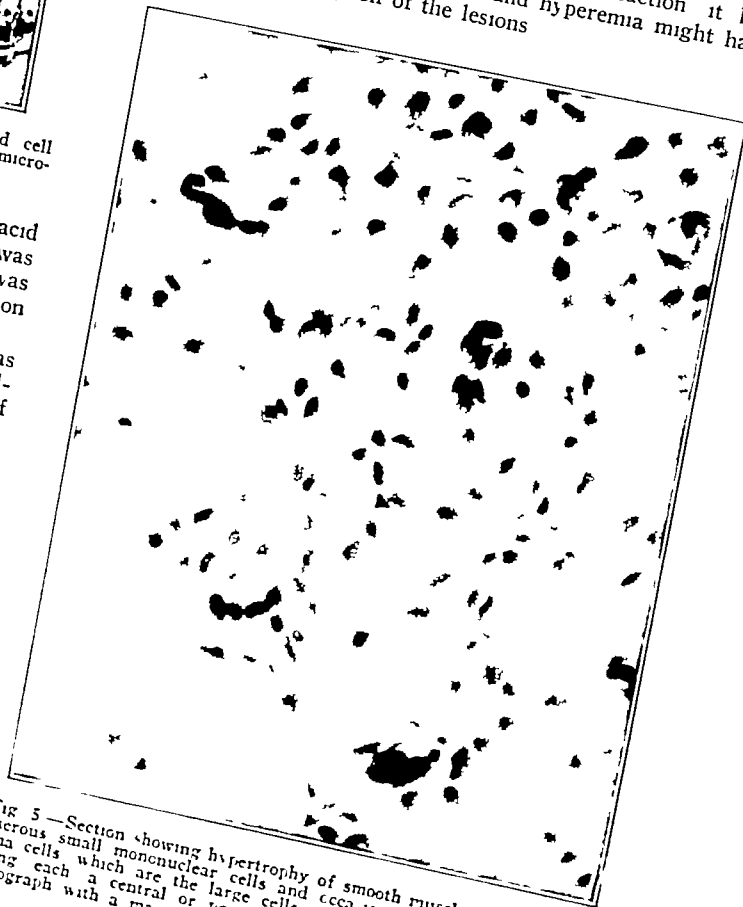


Fig 5—Section showing hypertrophy of smooth muscle bundles fibrosis numerous small mononuclear cells and occasional foam cells or xanthoma cells which are the large cells with pale staining protoplasm and having each a central or peripheral nucleus. Reduced from a photomicrograph with a magnification of 765 diameters.

The skin lesions were noticeably diminishing in size seventeen days after treatment was begun and at the end of a month many lesions had gone. At the end of one and one-half months only faint traces of previous lesions could be found. There has been no recurrence and the urine has remained sugar free. No insulin was used.



## SUMMARY

The occurrence of xanthoma diabeticorum in a young adult is unusual, although a few such cases have been reported

In an early case of this disorder, response was prompt and satisfactory to dietetic management, the skin disorder clearing up completely in one and one-half months. Insulin therapy was not necessary

The essential pathologic characteristics of early xanthomatous lesions include subepithelial, perivascular fibrosis and round cell infiltration, hypertrophy and degeneration of the smooth muscle bundles, and the presence of a few large mononuclear cells with pale protoplasm—the “foam” cell or xanthoma cell

318 Sherland Building

# VON RECKLINGHAUSEN'S DISEASE CASE PRESENTING INVOLVEMENT OF LEFT EYELIDS

ARTHUR A. KNAPP, M.D., NEW YORK

Following is the report of a case of von Recklinghausen's disease, with unusual manifestations

*History*—A man was admitted to the New York City Cancer Institute, in 1925, because of a growth on the left side of the face, which had been present since birth

The family history has no bearing on the case

1926, to improve his appearance had to be terminated because of severe hemorrhage. However, the temporal tumor was well visualized. It was encapsulated and firmly attached within the orbit. During the past three years, both growths have increased in size, the secondary, temporal, tumor assuming a more inferior position

Ringings in the left ear, “like a dynamo,” accompanied by deafness, has been present as long as the patient can remember. Radium therapy has been of no avail

The patient has had measles, influenza and a tonsillectomy in childhood. His sex development is unaltered. Most of his life has been spent in institutions. During his stay, many diagnoses have been made: fibro-angioma and lymphangioma, both supported by biopsy reports, sarcoma, lymphosarcoma and teratoma of the orbit

*Examination*—The patient, an American, aged 25, is well developed and well nourished, with a markedly deformed head

The head is large: the circumference, 61.3 cm; the fronto-occipital diameter, 39.4 cm; the bitemporal, 35.6 cm

There is a massive, flabby, nontender growth occupying the whole left side of the face, encroaching somewhat onto the right side, and extending from the scalp down to and including the upper portion of the neck. This mass is covered with a thick, darkly pigmented skin and seems to hang from the skull, with lines of tension visible on the skin above it. It gives the



Fig 1—Front view of patient, showing marked elephantiasis



Fig 2—Lateral aspect, showing secondary, temporal, tumor



Fig 3—Lateral view, showing enlarged and angulated mouth

At birth, which was normal, a “bulging” of the patient's left eye was observed. At 6 months, the child sat up, at which time his mother noticed a “drooping” of the left upper lid, which appeared to be swollen throughout. Shortly after this, the swelling involved the cheek, with the subsequent growth of the left cheek out of all proportion to the right. He walked before he was a year old. When 2 years of age, an ophthalmologist was consulted in regard to the exophthalmos. Some surgical procedure was advised. The parents were told that it was a dangerous operation. They refused to have it done. The bulging of the eye and the swelling of the face grew progressively worse. At 4½ years, his left eye was enucleated to improve his condition. When he was 5, a “big freckle” was seen on his back. Three years later he was struck in the left temple by a pitched ball. Following this trauma, a local erythematous area appeared. Not long afterward, a small “lump” was apparent at the site. The latter persisted and slowly increased in size, while the larger mass continued to grow.

In 1916, at 12 years, an attempt to remove the mass surgically proved unsuccessful. An operation, under local anesthesia, in

appearance of tremendous, redundant tissue, with flounce-like folds. It is divided into three lobes by healed scars of previous operations and by the crease made by the lids. The scars are continuous, forming a rough rectangle just anterior to the ear. The predominating tissue is fairly soft, giving a seedless-raisin feeling, and having normal sensation. It is chiefly responsible for the great hypertrophy of the various structures. Over the scalp there is comparatively slight increase of tissue, becoming more pronounced inferiorly.

A rather hard, oval tumor, 11.4 by 9.5 cm, is present in the temporal portion of the upper lobe of the growth. It is nodular, nontender and firmly attached posteromedially. The skin over it is freely movable. Surrounding it is a sharply outlined ridge of bone. Its posterior-inferior border is 2.4 cm above the ear and continuous with the mastoid ridge.

The eyebrow is elongated temporo-inferiorly, bordering the upper lobe of the mass anteriorly. It is 12.1 cm long and 2.5 cm wide. It is not as thickly infiltrated with cilia as the right side. The left supra-orbital arch is higher than the right. It has a sharp and rough border. By raising the upper fold of the mass, the orbit, with its contents and appendages, is presented for examination. The lids are hypertrophied. Their consistency is homogeneous. Cilia are seen over the margins

The palpebral fissure is 4.5 cm. long. A creamy, mucoid, conjunctival secretion collects between the lids. Separating the lids reveals the velvety, hypertrophied and chronically inflamed conjunctiva. Its bulbar portion closes over the orbit. But little evidence of the culdesacs remains. Several vertical bands of scar tissue run through the conjunctiva. Palpation of the orbit from without discloses an absence of the globe. No tenderness is present. The cavity is smaller than normal.



Fig 4—Section showing fibrillated connective tissue and elongated cells with rod shaped nuclei some of which are arranged in bundles

The corneal sensitivity of the right eye is slightly diminished. There is a hyperplasia of the corneal nerve fibers. The fundus is myopic.

Further physical examination reveals an embarrassment of speech, a palpable thyroid, and a left dorsal scoliosis. There are several molluscosus neurofibromas and cafe-au-lait pigment patches scattered over the body, including both the trunk and the extremities. The tumors are round, smooth, nontender and about 1 to 3 cm. in diameter. At the left third costochondral junction is a small tumor with six black coarse hairs 4.5 cm. long. In the left popliteal space is a larger tumor, 7 by 5 cm. Unlike the others, it is not attached to the skin but is subcutaneous. The pigment plaques are irregular and vary in size from 2.5 to 11.3 cm. There are a number of small, telangiectatic, fiery red spots over the trunk. The hands are large and show a fine tremor. They have an equally strong grip. There is no hyperextensibility of the joints. The skin stroking reaction is delayed.

The blood pressure is 130 systolic and 72 diastolic, the temperature, 98.6 F., the pulse, 70 to 80, and the weight, 138 pounds (62.6 Kg.). All the latter figures have remained approximately constant during the last five years.

The patient is given the regular hospital diet. He eats and sleeps well.

The urine blood count, hemoglobin, blood Wassermann, and carbohydrate tolerance tests, and examinations for melanin, glycosuria, albuminuria and eosinophilia are all negative.

Roentgen examination of the cranial vault shows areas of rarefaction and bone production. The sella turcica is considerably enlarged. It is square or box shaped. The clinoid processes are diverged, as though the pituitary body were enlarged. The floor of the sella turcica is not eroded, but appears to be compressed into the sphenoidal sinus. The petrous portion of the temporal bone shows the cystic appearance that is associated with neurofibromatosis.

Examination of the long bones of the extremities, and also the pelvic bones, reveals no evidence of any definite pathologic changes.

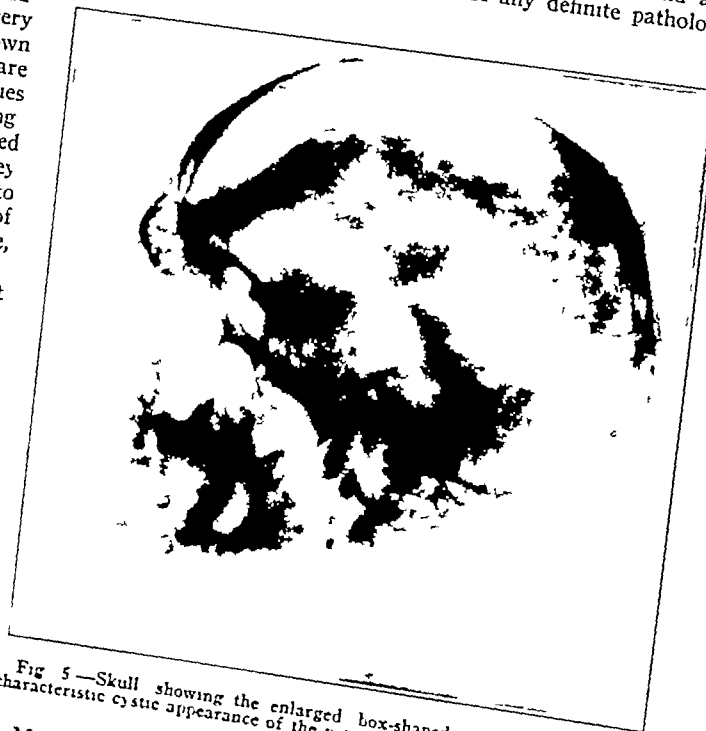


Fig 5—Skull showing the enlarged box-shaped sella turcica and the characteristic cystic appearance of the petrous portion of the temporal bone.

Microscopic examination of the excised tissue shows a growth of fibrillated connective tissue with numerous small blood vessels. Edematous areas are present. There are elongated cells with rod shaped nuclei some of which are arranged in bundles suggesting nerve fibers. The surface of this section has a zone of polymorphonuclear leukocytes.

The diagnosis is neurofibroma.  
130 East Fifth-Eighth Street.

The nose is huge. Its lower two thirds is greatly distorted. Only a small part of it on the right side appears uninvolved. In strong contrast to this the remainder of the organ is very prominent. Its flabby tissue merges with and hangs down with the structures on the left. The two nasal bones are present. The septum deviates to the right. Both nasal cavities are extremely roomy with the left having a greater opening. The vibrissae are long and thick. All conchae are accounted for. The lips are markedly hypertrophied. To the left they slope inferiorly with the outer fourth dipping down sharply to form a right angle. On the right, the lips for a distance of 12 cm. on each side of the mouth appear normal. Otherwise, they grow progressively worse to the left.

The angulated mouth measures 8.3 cm. After opening it widely with the aid of the fingers one sees an abnormally large cavity. The palatine process of the maxilla on the left side is acutely arched and shows an absence of teeth on the alveolar ridge. The line joining both processes is irregular. Partly covering over the left buccal mucous membrane is a fairly large neurofibroma measuring 6.1 by 2.7 cm. It stretches across the horizontal meridian and is free on all sides except posteriorly where it is firmly attached. It is smooth and nontender. The left mandible is smaller than the right and also shows the absence of teeth. Both palatine arches and tonsils are present but the left side is generally deformed. The roof of the mouth is highly arched. Protruding a little from the hard palate are two medium sized neurofibromas smooth oval and nontender. There is a left hemimacroglossia.

Temporally the small lobe in front of the ear is rectangular. Horizontally it measures 9 cm. vertically 5.1. Completely demarcating it are the healed scars of the previous operations. The lower half of the ear is moderately hypertrophied. Inferiorly it blends with the surrounding tissue. An external auditory canal is present but it ends blindly.

Below the flabby large lower lobe hangs like an apron. In its most dependent portion in the postero-inferior angle, is a small bean sized nontender nodule attached to the skin and the underlying tissue.

DUODENOCOLIC FISTULA WITH INCOMPETENT  
SPHINCTER OF ODDI

CLARENCE E REES, M D, SAN DIEGO, CALIF

This case of duodenocolic fistula is reported because of several unusual features. 1 The condition is apparently very rare, as I was unable to find any reports of a fistula between the duodenum and the colon which was not secondary to a malignant growth. 2 Traction from the fistulous tract had resulted in incompetence of the sphincter of Oddi, so that the contents of the duodenum were allowed to pass into the bile passages. This fact accounted for the unusual roentgen observations following the oral administration of barium, in which the ramifications of the hepatic tree were revealed, filled with the barium. 3 Finally, the fact that the liver had suffered no apparent damage in spite of the fact that it had been subjected to regurgitation of the contents of both the duodenum and the colon over a long period of time is rather remarkable.

The patient was a married woman, aged 62, who had always been in good health with no long illnesses except typhoid at the age of 34. She complained of indigestion and a sense of weakness or soreness in the pit of the stomach, which had been present for the past eight or nine months. She had first noticed that certain foods, such as pastry and candy, did not agree with her, and then that fruits and raw vegetables began to distress her, although she had periods of complete relief from discomfort. The distress came on about two hours after meals, accompanied by a great deal of gas and occasionally the vomiting of sour material. Saline laxatives, until recently, had given complete temporary relief. On only two occasions, however, was the distress severe, and the patient had always felt that she could control it by care in her diet. There was no history of gallstone colic and she had never been jaundiced. She had lost about 15 pounds (6.8 Kg) since the onset of her trouble.

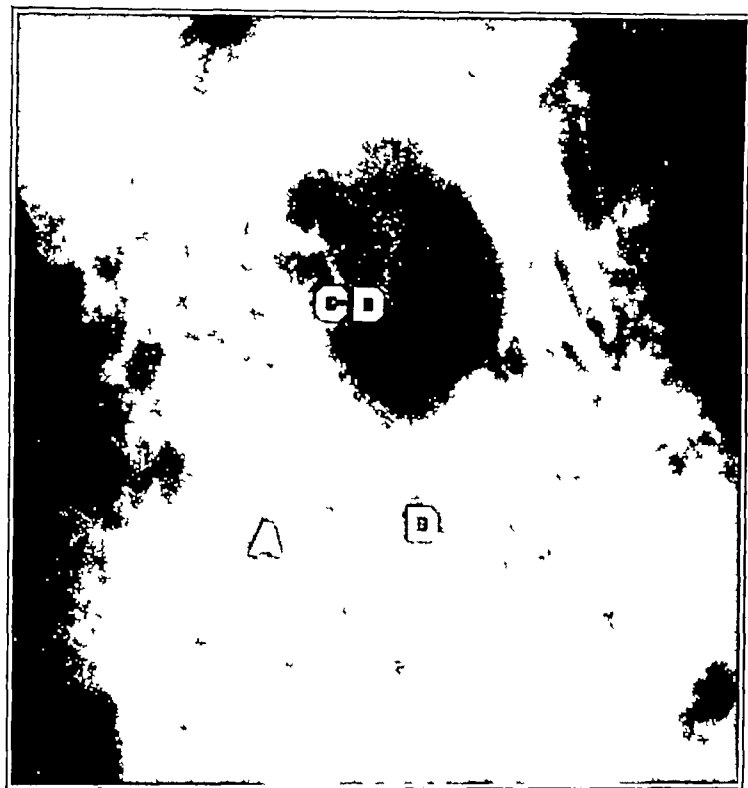


Fig 1—Postoperative study, direct lateral film, one half hour after ingestion of barium meal. A, ampulla of Vater. D, duodenal bulb, CD, common duct. The ducts are visualized by the barium meal.

Physical examination was negative throughout with the exception of marked tenderness and muscle rigidity over the upper part of the abdomen. Urinalysis gave no abnormal results. A blood count revealed a hemoglobin of 14 Gm (Newcomer) and 6,300 white corpuscles, of which 63 per cent were neutrophils, 34 per cent lymphocytes, and 3 per cent large mononuclears. The Kahn reaction of the blood was negative, and the serum showed no bile pigment.

Roentgen examination of the gastro-intestinal tract together with cholecystographic study was made. The roentgenologists, Drs L C Kinney and A E Elliott, interpreted the results as indicating a nonfunctioning gallbladder, with evidence of thickening of the gallbladder wall. They stated that the outstanding finding of the barium meal was the relaxed ampulla of Vater, the partial filling of the common bile duct with the barium, and the barium distributed throughout the ramifications of a portion of the hepatic ducts. These observations suggested a relaxation



Fig 2—Postoperative study, six hour examination. The gallbladder and bile ducts in both lobes of the liver are visualized with barium.

of the ampulla of Vater with a retrograde movement of the barium solution. A fistula between the intestinal and the biliary tracts was to be considered.

Exploratory laparotomy was advised and performed. The stomach and pylorus were negative to inspection and palpation. The liver was found to be normal in appearance, the gallbladder was free, was slightly thickened and contained no stones. The common duct was dilated to about twice the normal size. On exploration of the duodenum, which was moderately dilated, a dense band of tissue was found extending anteriorly from the middle of the lateral aspect of the descending duodenum, over the lower half of the descending duodenum and the proximal portion of the horizontal duodenum, to the upper border of the transverse colon. Further dissection revealed a fistulous tract which, under the tension of its attachments, approximated  $2\frac{1}{4}$  inches in length. When the tract was opened, it was found to extend from the lumen of the transverse colon to that of the duodenum just below the opening of the common bile duct. The traction had rotated the second portion of the duodenum so that the ampulla of Vater was located in the posterolateral position, and there was a small bridge of tissue between the opening of the fistulous tract and the ampulla of Vater. There was a dilatation of the common duct from the ampulla upward, and the ampulla was wide open. The fistulous tract was ligated and sectioned from the colon, and the stump was inverted in a manner similar to the treatment of an appendiceal stump. The upper end of the tract was removed from the duodenal wall and the defect closed with three layers of chromic suture. The gallbladder was then opened, and considerable gas escaped.

Examination of the fistula itself showed that it contained the components of two separate organs, namely, the duodenum and the colon, the upper half being lined with intestinal epithelium similar to that of the duodenum and the lower half with epithelium similar to that of the colon. At about the midportion there was a small constriction, which could be identified as the point of anastomosis between these two structures.

Speculation as to the mechanism producing this fistula is interesting and, in view of the fact that there is no embryologic explanation for it, it seems most reasonable to suppose that the perforation of an ulcer from the colon into the duodenum during the attack of typhoid, with subsequent elongation from traction, was responsible for its formation. The absence of a history of gallstones or jaundice and the fact that the fistula connected with the duodenum and not with the common bile duct seem to rule out the possibility of the rupture of the duodenum into the colon by a stone. We believe that the incompetence of the sphincter of Oddi was caused by traction from the long continued pull of the fistulous tract on structures surrounding the ampulla.

The postoperative course in this case was uneventful. At no time was there any evidence of intestinal contents or gas in the gallbladder drainage. Charcoal, when given by mouth, was not evidenced in the bile but methylene blue (methylthionine chloride, U S P), given orally, appeared in the bile from the gallbladder within an hour following its administration. Methylene blue was then given to another patient with biliary drainage with no resultant evidence of it in the bile.

Since operation, the patient has been following a general diet and has been symptom free. Recent roentgen examination, however, shows that the duodenal contents are still regurgitating into the bile ducts and roentgenograms taken postoperatively (figs 1 and 2) show a more complete filling of the hepatic ducts and gallbladder than do the plates taken before operation. Operation in this case did not result in the prevention of the duodenal contents from entering the bile ducts, because of the incompetence of the sphincter of Oddi, but it did result in the complete relief of symptoms and, by the removal of the duodenocolic fistula, in the prevention of the regurgitation of the highly septic material of the colon into the duodenum, bile ducts and liver.

2001 Fourth Avenue

## Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL  
ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT  
H A CARTER Secretary

AMPLEAIR ACCEPTABLE

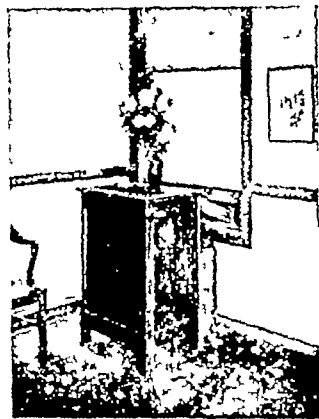
The Ample Air Filtering Machine is manufactured by the Independent Air Filter Company, 29 South Clinton Street, Chicago. The purpose of the machine is to filter the air supplied to a small office room or bedroom and more particularly for ridding the air of pollen as an adjunct for the relief of hay fever symptoms.

Resembling a radio console cabinet the AmpleAir is 41 inches high, 26 $\frac{1}{4}$  inches wide and 16 $\frac{1}{2}$  inches deep and weighs 190 pounds. The motor and the blower fan are mounted in the lower portion of the cabinet on resilient springs to eliminate motor noises. The inside of the cabinet is lined with sound-proofing material. The rear upper portion holds the filter which is enclosed in a removable container. This container is so designed that it may be removed easily from the AmpleAir without scattering dirt dust and pollen in the room. The street air enters the rear of the cabinet in an adjustable duct which is dirt and dust tight and fits snugly into any window. The cabinet itself is mounted on ball bearing casters with rubber rollers. Motors can be obtained to run on either direct or alternating current.

Air is drawn in the window piece through the filter to the fan and is discharged through a register at the top or the bottom. The volume of the air may be controlled by a damper which is accessible by merely hitting the top. In case of either extremely cold or extremely hot weather a recirculating damper in the entrance duct can be turned thus stopping the incoming air and recirculating and filtering the air within the room.

The filter material consists of a continuous strip of high grade wool felt 12 feet long and 20 inches wide and having an area of about 20 square feet. By an ingenious construction, the 20 square feet of material is folded plaitlike to occupy space in the removable filter container approximately  $21\frac{1}{2}$  by 17 by  $7\frac{1}{4}$  inches, thus making six folds about 12 inches high. The zigzag sleeve construction forms a tight seal, and under most circumstances the leakage of pollen around the edges of the filter is nil. If the air is relatively clean (not like the air around an industrial city, containing soot and dust), the filter will probably last the entire hay fever season without renewal. As the filter becomes dirty, however, the volume of air displaced through it is reduced.

The Council on Physical Therapy directed a test on the pollen filtering efficiency of the AmpleAir under conditions in which the dust concentration of the air was relatively high but the pollen concentration perhaps relatively lower than that which would be expected in suburban districts. Each day of twenty-four hours, two petroleum coated slides were exposed about one inch from the louvers at an angle slightly less than perpendicular to the blast of incoming air. The investigation demonstrated that very little ragweed pollen passed through were submitted to two specialists pollen granules. The recorded panvny table



## The AmpleAir

### Pollen Filtering Efficiency of AmpleAir

Date	Pollen Granules per Cubic Yard						
	8/27	8/28	8/29	8/30	8/31	9/1	9/2
Ample air (average of two slides)	3	4	3	4	6	4 (new filter)	2
Filtered air in experimental room	3	1	3	2	8	2	0
Inside unfiltered air	25	62	230	145	No slide	No slide	No slide
Outdoor air	552	271	289	461	323	77	153
Humidity	84	No record	86	82	82	65	73
Wind direction	N W	No record	S W	S W	S	N E	N E
Temperature (average)	No record	60	80	80	82	70	72
Air velocity							
Inlet						47 cu ft per minute	
Outlet						44 cu ft per minute	
Power							143 watts

The volume of air displaced by the Ample Air was measured by means of a Tyco anemometer. The louvers were removed and the anemometer was placed on a sliding rack just above the register opening. At intervals definitely selected in order to give a representative cross-section of the area of the opening, anemometer readings were observed each for a unit time. After the correction of the anemometer readings had been subtracted or added as the case may be, the average of the anemometer readings was calculated. A correction was made for the wind velocity through the machine. The product of the area of the opening and the average speed of the air was considered the volume of the air displaced. Similar observations and calculations were made for the intake opening. The intake volume figured 457 cubic feet per minute, whereas the outlet was 444 cubic feet per minute. Readings were observed with the door of the room partly open to make sure that no back pressure was present. The committee is aware that some authorities believe that a Pitot tube is a more accurate instrument than the anemometer for velocity determination. Never-

theless, the committee believes that the observations herein recorded are relatively accurate

If the AmpleAir is installed in a small office or bedroom, the Council believes that the unit will supply enough filtered air to satisfy a few persons desiring relief from the symptoms of hay fever. Clinical evidence coming to the attention of the Council indicates conclusively that patients are relieved only when they remain in a filtered atmosphere. Evidence that a hay fever patient will obtain relief for the entire day merely by remaining in a room with filtered air for eight hours, more or less, is lacking.

The Council on Physical Therapy believes that the AmpleAir will supply sufficient filtered air for a small office or bedroom occupied by two or three people and will serve as an adjunct in the relief of symptoms of hay fever. The Council declares the AmpleAir eligible for inclusion in the Council's list of accepted devices.

## Council on Pharmacy and Chemistry

### REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING  
REPORT P N LEECH, Secretary

#### METAPOLLEN NOT ACCEPTABLE FOR N N R

"Metapollen," a product of Metapollen Laboratories of Carbondale, Ill., is proposed for the intranasal treatment of hay fever and associated conditions, and for a variety of disorders originating in the nasal passages. Following are examples of the claims made for this preparation: "Quickly breaks up any attack of Hay Fever at any point in the course of an attack", "100 per cent are relieved for two years or longer", "Any one can administer Metapollen successfully", "Safe, Certain, Satisfactory", "Produces no systemic reaction", "No anaphylaxis possible in any case at any time", "Metapollen (intranasally) is curative in all types of hay fever [and] in most cases of pollen asthma", "When used in combination with Mangalac it is curative in acute and chronic sinusitis (without surgical drainage) and in acute and chronic otitis media", "In hypertrophic rhinitis it is curative, and in atrophic rhinitis it is the remedy of choice", "There are no contraindications to its use", "Inexpensive" [only "\$11.50 per kit"—no orders on account or C O D and no samples].

The Council has received numerous inquiries from physicians, many frankly skeptical, concerning "Metapollen". Therefore, inquiry as to the composition of this preparation was made by the A M A Chemical Laboratory. In a reply signed by E E Edmondson, Medical Director, it was stated that Metapollen is not a secret preparation, that its formula had been published.

It was gathered from the letter that at various times Metapollen had contained "glycerite of aluminum," silver nitrate, zinc chloride, zinc sulphate and copper sulphate, in various combinations and proportions. It was stated further in the letter: "We have no formula we would not change without notice if we see improvement by so doing." Together with the Metapollen solutions a preparation in tablet form is used, "Compyrine," said to consist originally of  $5\frac{1}{2}$  grains of a mixture in unstated proportions of "dimethylamine antipyrine" (amidopyrine), caffeine, phenacetin and hyoscyamus, this was later changed to a 5 grain tablet of nothing but amidopyrine with no change in the name. The remainder of the treatment consists of a local anesthetic (2 per cent of cocaine "muriate") and an inhalant said to contain menthol, camphor, thymol and methyl salicylate, also in unstated proportions. It appears that no special trade names have been applied to the latter two preparations.

#### WHAT IS METAPOLLEN?

Reference to circulars distributed by the manufacturer, to reprints of three articles by Dr Edmondson and to the letter quoted, reveals the following descriptions of Metapollen:

"a balanced synergistic astringent of silver zinc, aluminum tetramethylthionine chlorhydrate [presumably tetramethylthionine hydrochloride, which is methylene blue] in specially prepared hypertonic media"

"Aluminum silver and zinc a 1 per cent solution of equal parts of the three drugs in a glycerine aqueous solution  
"a balanced synergistic, antiseptic astringent of aluminum, silver and zinc aa—q s ad gr xxx to oz"  
"The therapeutic solutions run now in strength from about 2 per cent to about 8 per cent of the salts"

Nowhere in this "literature" does there occur a simple, accurate and concise statement of composition. The latter varies apparently at the caprice of the manufacturer.

The Metapollen treatment of hay fever apparently proceeds in this fashion. The patient is given a 5 grain tablet of "Compyrine" (amidopyrine), a short time later his nasal mucosa is anesthetized with 2 per cent cocaine hydrochloride solution (the use of epinephrine and ephedrine is interdicted, although for what reason it is not apparent), then the Metapollen solutions are applied by dropper, spray or swab to the accessible portions of the nasal and nasopharyngeal mucous membranes, following which the patient is allowed to sniff the inhalant described, to allay somewhat the irritant action of the treatment. Following this, he is given another tablet of "Compyrine" and possibly yet another still later. Occasionally, the pain is further allayed by the use of one of the barbiturates. This procedure, except that the amidopyrine dose is later reduced, is carried on daily or every two or three days for from six to eight weeks (or longer). In sinus disease the treatment is still further complicated by the intramuscular injection every five days for seven doses of 5 to 10 cc of "Mangalac," said to consist of "0.045 Gm Manganese butyrate to oz sterile fat-free milk and 9 min 1 1000 solution Spengler's Immun Korper", the latter appears to be a complex form of nonspecific protein therapy.

#### "NO POLLEN IN METAPOLLEN"

With respect to the names here employed, Dr Edmondson has the following to say: "As there is no physics in META-physics, and no carpal in METAcarpal, except the names, so there is no pollen in Metapollen. The compound tablet was also called Compyrine and still is so named, though we have changed the formula."

In respect of the therapeutic usefulness there is furnished a list of case reports, in large part by Dr Edmondson, in addition there are a number of testimonials alleged to have been made by physicians and others, all describing in glowing terms the remarkable and permanent relief from nasal and otologic symptoms, and even from asthmatic attacks, all attributed to this treatment.

#### USE OF ASTRINGENTS

The use of astringents of this sort on the nasal mucosa is not new, nor is the use of any of the alleged constituents of Metapollen. The formulas of the mixture, or mixtures, according to the advertising literature, are admittedly not constant and may be changed momentarily without notice at the whim of the manufacturer. The use of a proprietary name, let alone as suggestive and misleading a one as "Metapollen," is certainly unwarranted. There is no evidence that the effects of aluminum, zinc and silver salts in combination are any different from those of the individual salts used separately, one wonders about the compatibility of the solutions. The use of a proprietary name for amidopyrine, the same name that was previously used for a mixture of that drug with several other compounds, shows the extent to which regard for scientific decency in nomenclature has been sacrificed.

The daily use on the nasal mucous membrane of highly astringent solutions, such as apparently are sold under the name Metapollen, may be fraught with serious consequences. The nasal vault is lined with a delicate ciliated epithelium, sensitive to medicaments of all sorts. Such treatment, it is likely, would result in destruction of the mucous membrane and replacement with stratified squamous epithelium. The object of shrinkage of the nasal structures might be attained, but at the expense, probably, of the normal physiologic functions of the nasal mucosa.

Even if, regardless of these considerations, such treatment should be undertaken, it would be essential that the physician know precisely what substances he is using and in what concentrations. This would be impossible with the mixtures under consideration.

Further, the originator of this treatment appears to have taken no notice of the probable habituating effects of a daily intranasal dose of cocaine for a period of six or eight weeks.

It would not be overstating the case to say that this is a highly dangerous procedure. The Council considers as particularly reprehensible the advice of frequent cocaineization of the nasal passages

The Council declared Metapollen to be unacceptable for inclusion in New and Nonofficial Remedies because no satisfactory formula has been furnished by the manufacturer (rule 1), no tests for identification and purity have been established (rule 2), claims of special therapeutic usefulness are not warranted by the evidence (rule 6), the name is objectionable (also true of "Compyrine") as it is not indicative of composition (rule 8), the composition is unscientific (rule 10)

## Committee on Foods

### REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

RAYMOND HERTWIG Secretary

#### MORTON'S IODIZED SALT

**Manufacturer**—Morton Salt Company, Chicago

**Description**—Table salt containing 0.023 per cent potassium iodide, 0.1 per cent sodium carbonate and 0.7 per cent magnesium carbonate. The sodium and magnesium carbonates tend to preserve the free running properties

**Manufacture**—Morton's Free Running Salt (THE JOURNAL, May 14, 1932, p 1745) is admixed with definite quantities of potassium iodide by carefully controlled methods to assure a uniform mixture of the desired composition given above

**Analysis**—(submitted by manufacturer) —

	per cent
Moisture	0.1
Salt	98.5
Potassium iodide	0.023
Magnesium carbonate	0.7
Magnesium chloride	0.01
Sodium carbonate	0.1
Calcium carbonate	0.01
Calcium sulphate	0.52
Calcium chloride	0.03

**Claims of Manufacturer**—This iodized salt is for all table and cooking uses of salt. The added sodium and magnesium carbonates tend to preserve its free running qualities. The iodine in the salt aids in preventing goiter caused by insufficient iodine in the diet. Used daily as the only salt on the table and in cooking, it richly supplements the iodine of diets deficient in that element and thus helps to protect against goiter

#### ATLANTIC SUPER-CLARIFIED GELATIN

**Manufacturer**—Atlantic Gelatin Company, Inc., Woburn, Mass

**Description**—Granular and flake plain unsweetened, unflavored gelatins, graded on the basis of jelly strength for special uses

**Manufacture**—Atlantic gelatin is made from calf beef and pork skin trimmings of animals used for human consumption. A limited amount of gelatin is made from osseine—a derivative of packer bone

When calf and cattle trimmings are used they are thoroughly cleansed in water are treated with alkali solution to convert the collagen into gelatin are washed thoroughly in water to remove the alkali and the last traces of alkali are neutralized by the addition of arsenic free hydrochloric acid. The treated skins are removed to wooden cooking vats with perforated aluminum false bottoms and covered with hot distilled water which extracts the gelatin. The gelatin solution is admixed with porous cellular mineral filter aids and filtered through cloth covered aluminum filters under pressure in order to remove suspended matter. The filtered gelatin solution is concentrated with the aid of heat in vacuum is filtered again

is cooled and flowed onto a rubber belt which passes through a closed refrigerating chamber where it is chilled and jellied, is transferred to clean wire nets of monel metal and is dried by warm air currents in closed tunnels. The dry gelatin is broken, ground and mixed by machine, the uniform granular product is packed in wooden barrels, containing cellulose fiber or cotton bag inserts

Gelatins made from pork skins are prepared in the foregoing manner excepting that the skins are treated with acid instead of alkali solution at the start of the processing for converting the collagen into gelatin. The excess acid is removed by washing, after which the gelatin is extracted and treated as previously described

Gelatin made from osseine is prepared from edible bone materials commercially available as a raw product. The osseine is treated with alkali solution to convert the collagen into gelatin. The alkali is removed by thorough washing, and remaining traces are neutralized with arsenic free hydrochloric acid. Subsequent treatment is similar to that for calf and cattle skins

Every batch of gelatin is subjected to laboratory examination and is tested for total bacteria, B coli, gelatin liquefiers, jelly strength, color, clarity, viscosity, arsenic, copper, zinc, sulphur dioxide, moisture and ash

**Analysis** (submitted by manufacturer) —

	per cent
Moisture	8.0-12.0
Ash	0.4-1.3
Fat (ether extract)	0.0-0.0
Protein (N X 5.50)	86.0-90.0
Carbohydrates	0.0-0.0

Jelly strength of different grades (Methods of the Edible Gelatin Manufacturers' Research Society of America, Inc.), 50—290 Bloom

	parts per million
Arsenic (As)	0.0-0.5
Copper (Cu)	0
Zinc (Zn)	0
Lead (Pb)	0
Sulphur dioxide (SO <sub>2</sub> )	0
Added preservatives	none

**Calories**—3.6 per gram 102 per ounce

**Micro-Organisms**—The manufacturer guarantees absence of Bacillus coli, other gas forming bacteria, and liquefying and pathogenic bacteria

**Claims of Manufacturer**—Food gelatins designed for special uses, prepared from the edible skin and bones of government inspected animals, recommended for use in normal and restricted diets and in all food gelatin preparations

#### HEINZ PURE (VIRGIN) OLIVE OIL (Imported)

**Manufacturer**—H J Heinz Company, Pittsburgh

**Description**—Imported first cold press (virgin) Spanish olive oil

**Manufacture**—Selected olives at the proper stage of ripeness, from the best olive growing districts in Spain are pressed cold to expel the oil. Only the oil from the first cold pressing is used for this brand. The oil is washed, allowed to settle and filtered. Oil with richer bouquet is blended with more delicate bland oils to produce a uniform product with desired fine characteristic flavor. At no stage in the process of production is any neutralization or other treatment used to reduce acidity, remove malflavors, or otherwise conceal inferiority

The oils obtained from producing factories in Spain are assembled and blended in a Heinz factory at Seville, Spain. The blended oil is imported into the United States in steel drums. The quality is again checked and the product finally packed in glass bottles or tin cans

**Analysis** (submitted by manufacturer) —

Specific gravity 15.5 C/15.5 C	0.915
Refractive index at 15.5 C	1.471
Saponification number	183
Iodine number	81.6
Acidity as oleic acid	0.5%
Cotton seed oil	absent
Seaside oil	absent

**Calories**—9.0 per gram 2.6 per ounce

**Claims of Manufacturer**—The olive oil complies with U S P and U S Department of Agriculture requirements



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 18, 1933

## MEDICINE AND THE EXPERIMENTAL LABORATORY

A recent contributor<sup>1</sup> to current medical literature has commented on the change that has taken place in diagnosis and therapeutics through the adaptation of chemistry, physics and some of the biologic sciences to clinical needs. During the past two decades, signal advances have been made in internal medicine through a better understanding of the chemistry of the blood under various conditions, in electrocardiography and physical therapy by the application of newer developments in physics, and in the control of infectious diseases by the use of recent discoveries in bacteriology. The view has frequently been voiced that the obvious tendency to depend increasingly on the laboratory for aid in diagnosis or in following the response to treatment is not particularly encouraging, fear is expressed lest the product of modern training lose the *tactus eruditus*. To other observers it is plain that the rise of laboratory medicine is part of a cycle of change and that the pendulum of interest in this direction has already begun to swing backward somewhat. However, it must be recognized that many highly desirable permanent changes have been introduced into medicine during this period of readjustment.

A particularly able defense of the importance of scientific experimentation to medicine has recently been made by Mendel.<sup>2</sup> This recognized leader in the field of nutrition has analyzed the question both searchingly and with a benign attitude. He begins by pointing out how rare are the opportunities to conduct satisfactory experiments on human subjects. The difficulty of controlling conditions adequately as well as the inadvisability of bringing about abnormal deviations have restricted the investigator to the use of human subjects in whom functional or structural abnormalities are accidental. Inevitably, therefore, the investigator has been forced to study disease or to practice surgical

operations on laboratory animals. With cogent illustrations, Mendel emphasizes the large part of the available knowledge of physiology and of medicine in general that has been derived directly or whose development has depended on information obtained from studies on laboratory animals, and he points out that continued control of infectious diseases and the possibility of future discoveries in physiology would be lost if the misguided efforts of the antivivisectionists should be successful.

What attitude should the physician take toward the experimental sciences allied to medicine? With a fine sense of values Mendel agrees that, whereas his primary duty and interest should be with the understanding and treatment of disease as manifested in the patient, he must not fail to recognize the significance to medicine of the contributions made by investigators in the laboratory. Furthermore, an open attitude of mind must be cultivated lest one fail to appreciate that the practical value of experimental studies is not always immediately demonstrable. "That person must indeed be endowed with unerring judgment who can readily distinguish between scientific value and ultimate utility in research." Abnormal conditions that represent disease cannot be adequately studied or understood without a satisfactory appreciation of the normal behavior of the organism. It is of the utmost importance, therefore, that there be maintained the freedom and facilities for renewing acquaintance with normal life processes in the experimental laboratory.

The question of scientific experiment and medicine is of perennial interest. Medicine is constantly expanding the scope of its interest, and members of the profession should take a corresponding place in society. Surely there is no greater aid to perspective, poise and effective activity than an adequate appreciation of the manifold pathways by which have emerged those contributions which, in the final analysis, constitute medicine.

## ERADICATING BOVINE TUBERCULOSIS

Again there is a struggle over the question of eradicating bovine tuberculosis as a health measure. In Iowa, organized resistance to the area test method has been rife for more than a year and has now flamed into aggressive action in connection with the resistance to foreclosure actions. Troops have enforced the testing of cattle in accordance with the law, but finally the secretary of agriculture has declared a holiday on testing pending legislative action. A newspaper comment, emphasizing the economic implications of the controversy, declares<sup>1</sup> that "this T B proposition has a kick like a bay steer" and that "the secretary may find that he has a maverick by the tail."

<sup>1</sup> Smith, A. H. Practitioners Series. New York: D. Appleton & Co. 1932.  
<sup>2</sup> Mendel, L. B. Science 76: 393 (Nov. 4) 1932.

<sup>1</sup> Cedar Rapids Gazette, Jan. 25, 1933.

Wiser heads among the dairymen and farmers know that, if statute law is rescinded, the inexorable force of economic law will compel testing sooner or later, for enlightened parents, demanding safe milk for their children, will assure that ultimately there will be no market for the products from untested herds. Repeal of the area test laws now in force would be unfortunate, for the progress made under them has gone far to eliminate tuberculosis in cattle and will go further to virtually complete success. Economic stringency, sharpening all discontent and too often focusing it on the wrong scapegoat, appears to be threatening this as

The United States has adopted the so-called area plan for eradicating bovine tuberculosis. This grew out of earlier experience with certified and class A milk herds, in which it was demonstrated that by removing from a herd those animals which react to the tuberculin test, and repeating the procedure at stated intervals, the herd can be freed from tuberculosis and can be kept free if all animals added have been ascertained to be free from tuberculosis, or if the herd is augmented exclusively by natural increase. The area plan consists of testing

11 The American Medical Liberty League J A M A 79 592  
(July 29) 1922 Reprints may be had again when sample address d  
one is sent  
12 The Starr White-Quack J A M A 92 1292 (Aug 13)  
1929

well as other safeguards which in more prosperous times are accepted unquestioningly as necessities for the preservation of the public health. To scuttle them now will lead to consequences which future generations will regret. Pasteurization will help to protect our cities, but even that is subject to human error and carelessness, and when imperfectly carried out it has been shown to be ineffective in protecting the user of milk against tuberculosis<sup>13</sup>. Moreover, threats are heard against pasteurization ordinances on the specious ground that they raise the price of milk.

The situation in Iowa is ominous, not for Iowa alone but for other states to which the agitation may spread. The ease with which sound public health procedures can be placed in jeopardy is a significant commentary on the status of health education of our adult population. The medical profession must rally to the defense of the public against its own folly, a duty which the profession has always discharged, many times at heavy sacrifice.

## Current Comment

### INTRA-ARTERIAL ARSPHENAMINE THERAPY

The local spirocheticidal effect of intravenously injected arsphenamine conceivably varies with the amount of arsphenamine deposited in the local tissues. If so, the recently described method of increasing the local deposit of the drug in the central nervous system, by substituting intra-arterial for routine intravenous injection, is of research interest. While Kritschewski and Winogradowa<sup>1</sup> have thus far carefully avoided suggesting any possible clinical application of their new intravascular technic, their demonstration of variability in histologic distribution with different methods of intravascular therapy may be a valuable addition to our knowledge. The microscopic demonstration of locally phagocytosed intravenous arsenicals was made possible by the Janeso-Jimenez de Asua<sup>2</sup> technic, which fixes and precipitates certain arsenicals without altering their distribution in tissue cells. Study of such fixed tissues from intravenously injected mice revealed the cells of the pulmonary capillaries engorged with phagocytosed arsphenamine derivatives, with similar massive local deposits in the endothelial cells of the liver and the spleen. The other tissues were relatively free from demonstrable arsenic, the brain, for example, showing only an occasional endothelial granule. The distribution is quite different after intra-arterial (i.e., intracardiac) injection. The pulmonary capillaries are now nearly free from demonstrable arsphenamine with similar reductions in the local liver and splenic deposits. The resulting increase in available arsphenamine for other tissues is particularly apparent in the brain. In the pub-

lished photomicrographs, the brain capillaries of intra-arterially injected mice contain nearly a hundred times the amount of neurovascular deposit seen in mice that were given intravenous injections as controls. Whether or not there are similar local quantitative variations in vaccines, antibodies and other therapeutic agents injected into the blood stream has not yet been tested.

### ANOTHER EXCELLENT HEALTH RECORD

Economic necessity has created a sharp issue between the advocates of retrenchment in government at any cost and those who demand the preservation of public services that have justified their cost. Public health services have been the target in many places where reduction of budgets has been undertaken. Chicago has shown recently how economic necessity and health conservation can be reconciled<sup>1</sup>. In 1932, Chicago had a general death rate from all causes of 9.7 per thousand of population and an infant death rate of 50 per thousand living births. This surpasses even the splendid record of New York, to which reference was made recently<sup>2</sup>. For a cosmopolitan as well as metropolitan center like Chicago, this may be classed as an achievement of the first magnitude. It surpasses any previous record made in Chicago, the next best year being 1927, when the death rate was 10.4 and the infant mortality rate was 53.4. The record was made in the face of budget economies totaling \$500,000 as compared with 1931. The Chicago figures prove that economy and efficiency in government service are not incompatible. Health officials who face necessary curtailments in budgets can, by cutting their coat to fit their cloth instead of lamenting the need for reducing their budgets, produce results that are not only highly satisfactory to the taxpayers but creditable to the public health movement. Such a record may well be a source of pride to the workers who have made it possible. Incidentally, the employees of the health department are, like other employees of the city of Chicago, serving with their salaries many months in arrears.

### HORMONAL INTEGRATION OF BACTERIA

An infectious disease is presumably not a guerilla warfare between the animal body and individual bacteria but a physiologic battle against an organized infectious foe. This theory of a chemically integrated infectious material is suggested by recent studies of interbaccillary "activators" or hormones, notably by Miller<sup>1</sup> of Western Reserve University. The Cleveland investigator prepared sterile extracts of a strain of *Bacillus tuberculosis* that showed a definite tendency to develop non-acid-fast forms on routine culture mediums. This extract was first passed through a Berkefeld filter and then autoclaved to insure complete sterility. The autoclaved extract contained a growth-stimulating hormone for other strains of *Bacillus tuberculosis*, together with a "transformation factor" causing

<sup>13</sup> Bovine and Human Tuberculosis, editorial J A M A 86 554 (Feb 20) 1926

<sup>1</sup> Kritschewski, I. L., and Winogradowa, O. W. Ztschr f Immunitätsforsch 75 410 (numbers 5-6) 1932

<sup>2</sup> von Janeso, N., Jr. Ztschr f d ges exper Med 61 63 (May 21) 1928. Jimenez de Asua and Kuhn. Compt. rend. Soc de biol 99 242 (June 22), 1414 (Nov 9) 1928

<sup>1</sup> Press Service. Chicago Board of Health, Herman N. Bundesen, president, Jan 14 1933

<sup>2</sup> A Health Record for 1932, editorial J A M A 100 261 (Jan 29) 1933

<sup>1</sup> Miller F. R. J Exper Med 56 411 (Sept.) 1932

a fairly rapid "mutation" of these strains into non-acid-fast phases. With five of the six strains thus far tested with such extracts, the growth was apparently wholly of non-acid-fast types, or atypical pleomorphic forms similar to those recently described by Mellon.<sup>2</sup> These pleomorphic forms included non-acid-fast individual cocci, diplococci and tetrads, as well as non-acid-fast diphtheroids, branching forms, and forms containing spore-like nuclei, granules or inclusion bodies. After from four to eight generations in contact with the "non-acid-fast hormone," seventeen of these pure non-acid-fast cultures were returned to routine culture mediums. Only four of these have thus far reverted to or regenerated their original acid-fastness. Thirteen have been at least relatively stabilized in their non-acid-fast phase.

## Medical Economics

### NEW FORMS OF MEDICAL PRACTICE

#### 13 Group Hospital Service, Inc., St. Paul

Nine St. Paul hospitals have joined in the formation of a corporation, "not for profit," which will manage this scheme for the benefit of these hospitals and any others that may subsequently enter the scheme. Those now listed are Bethesda, Midway, Charles T. Miller, Mounds Park, St. John's, St. Joseph's, St. Luke's, St. Paul's and West Side General.

The plan is explained in an article by Peter D. Ward and A. M. Calvin in *Minnesota Medicine* for December, 1932.

Because the hospitals of Saint Paul believe there is an opportunity for them to provide scientific service to respective social classes who can budget their incomes to provide periodic payments of small sums to insure hospital care when it is needed, they propose to organize, for full or part time employed persons, a group hospitalization plan whose fundamental principle is to provide hospital care for twenty-one days each year to its members for a fee of seventy-five cents (75c) per month or nine dollars (\$9) per year. Thus the hospital bill will be carried by a group rather than an individual.

Such an organization will be called Hospital Service Incorporated and will be controlled by the participating hospitals through a Board of Trustees composed of one board member and the superintendent of each participating hospital. Thus there will be eliminated the possibility of abuse by either an individual or by a commercial organization such as those who are promoting various hospitalization plans throughout the country and whose sole interest is monetary. All benefits derived from the plan proposed for Saint Paul will be given to the patients and the participating hospitals.

There is no thought of profit making in this plan but only to collect sufficient funds from the groups to cover the actual cost of hospital care for those members who need hospitalization. Nor should this be interpreted as an insurance plan as it offers only hospital service to patients under physicians' care. Such a plan in no way competes with the physicians' professional services.

To establish and make workable this group hospitalization plan it will be necessary to obtain three to five thousand members; then the law of averages will apply safely, although the memberships at no time will exceed the margin of the number of unoccupied beds of the participating hospitals.

The organization will deal with groups, not individuals. Each member will be given full liberty in the choice of one of the participating hospitals, as well as his choice of physician, provided the latter is in good standing and acceptable to the selected hospital.

The membership fees will be collected by payroll deduction and paid to the Hospital Service Incorporated, which will in turn reimburse the hospitals for their services.

To each member in case of illness necessitating hospitalization will be furnished hospital care including board and accommodation in a ward (although he may have private or semi-private room accommodation) by paying the difference between the two, less a discount of 25 per cent) covering the service of anesthetics, general nursing, including under-graduate and graduate staff, service of dietitian, clinical laboratory service at the amount of \$15, x-ray to the amount of \$15, routine medical care, surgical dressings and all other usual hospital services.

In case of utilization beyond the number of days allowed is required, the fee will be turned at the regular rate, less a 10 per cent discount for a first extension, ninety days.

If a further extension is required when a member is not returned to the hospital, the fee will be turned at the regular rate, less a 10 per cent discount.

Members and others interested in this plan should write to the Association of Medical Economics, Inc., 300

Services not furnished are those of the physicians, surgeons, and special nurses nor are special nurses' board and special prescriptions supplied.

A member will be given hospital service only on the recommendation of his physician who is a member of the medical staff of the selected hospital or who is acceptable to the selected hospital and only during such time as he is under treatment and care of such physician. He is to leave the hospital when discharged by his physician; otherwise he will be requested to pay in cash full hospital charges for services received after advisement that further hospitalization will be unnecessary.

Compensation, mental, contagious and tuberculous cases are exempted. Dependents of members are given 10 per cent reduction on hospital charges for a period of ninety days or less, and in case of epidemic or disaster overcrowding the hospitals the obligation to the member may be discharged on refund of the amount paid during the current year.

In a note added to the foregoing article it is stated that

It will be perfectly satisfactory to the organization to have several members of the Executive Committee of the Ramsey County Medical Society serve on the Board of Trustees or to have the Executive Committee of the R. C. M. S. serve in the capacity of an Advisory Committee.

The contract between the Group Hospital Service, Incorporated, and the individual hospitals provides for the accumulation of a reserve equal to \$9 for each member, and for the distribution of all sums in excess of such an amount to the member hospitals "on the basis of the number of days of hospital service rendered by each since the day on which the last distribution was made."

The hospital is to receive \$5 per patient day for twenty-one days, and the amount of the discount that may be granted under the contract for additional hospitalization or for the care of dependents.

#### COMMENT

The merits and demerits of this are much the same as those of similar plans previously discussed. It has erected safeguards against exploitation by outside agencies and shows a willingness at least to accept the advice of the county medical society. There are not yet available sufficiently accurate actuarial estimates to determine whether the amount charged is adequate to meet the expenses, especially if there is a growing tendency on the part of members to demand hospitalization. Such a tendency to demand increased services has always arisen when a large number of people pay for such services in advance.

The fact that the plan is apparently to be confined to employed persons and to depend on the "check-off" system for collections justifies the criticisms of partial compulsion, the exclusion of large sections perhaps most in need of medical services, and the possibility of payment over a period of years only to be disqualified for benefits through discharge when most in need of such services.

The plan carries the dangerous possibility of division of the medical profession and consequent weakening of control of professional standards that are characteristics of all such plans not based on unified action by the county medical society.

The clause providing "hospital service required when a member is not confined to the hospital" suggests that the hospital scheme proposes to enter the field of offering diagnostic and laboratory service in competition with private practitioners, illustrating the tendency of such schemes to expand beyond the legitimate field of hospitalization.

## Association News

### MEDICAL BROADCAST FOR THE WEEK

#### American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 9:45 to 9:50 a. m. (central standard time) over Station WBBM (770 kilocycles or 389.4 meters).

The subjects for the week are as follows:

February 20. The School Lunch  
February 22. Occupational Diseases

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

February 2. Have You Missed Something?

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ARKANSAS

**Personal**—Dr James A Summers recently resigned as health officer of North Little Rock to accept a similar position for Pulaski County

**Bill Introduced**—H 200, to amend the optometry practice act, proposes to define the practice of optometry as "the employment of any method or means, other than the use of drugs, medicine or surgery, for the diagnosis of any optical defect, deficiency or deformity, or visual or muscular anomaly of the visual system, or the prescribing or the adoption or the duplication of lenses, prisms, or ocular exercises for the correction, relief, or aid of the visual functions"

### CALIFORNIA

**Personal**—Dr David B Fields, for nearly thirty years health officer of Trinity County, has retired because of illness Dr Charles H Law, Weaverville, has been appointed to succeed Dr Fields—Dr Ina M Richter, assistant clinical professor of medicine, University of California Medical School, San Francisco, has become director of La Loma Feliz School near Santa Barbara, which was recently established to teach handicapped children, especially those with heart disease, to live within the limits of their handicap Dr Richter, who relinquished practice in San Francisco, Dec 15, 1932, has also been secretary of the milk commission of the San Francisco County Medical Society—A dinner in honor of Dr Francis M Pottenger, Monrovia, retiring president of the American College of Physicians, was given by Southern California members of the college in Los Angeles, January 12, Dr David P Barr, St Louis, was the guest speaker—Dr Joseph F Poheim has been appointed chief of the city physicians of San Francisco, for ten years Dr Poheim was one of the six physicians employed in this capacity, he will be succeeded by Dr Louis D Roncovieri

**Bills Introduced**—A 984, to amend the dental practice act, seems to be designed to enable licensed dentists to practice dentistry as employees of corporations without subjecting themselves to revocation proceedings S 552 proposes to create a division of psychiatry in the Department of Institutions S 559, to amend the workmen's compensation act, proposes to make compensable "any disease caused by and arising out of the particular employment during the period of which such disease manifested itself" A 1159 proposes to create a board of naturopathic examiners and to regulate the practice of naturopathy It also proposes to create a public corporation to be known as the "Naturopathic Association of California," to be composed of all practicing naturopaths, which is given very broad powers Naturopathic licentiates are to be given the same rights as licentiates of the medical practice act with respect to the making of "burial, death, birth, or marriage certificates," and are to be permitted to practice within the confines of any institution supported in whole or in part by public taxation "Naturopathy is defined and hereby declared to include physiotherapy, physical therapy, phytotherapy, biochemistry, and the use of antiseptics, and more especially defined in detail as the science and art of applied therapeutics and prophylactic hygiene and sanitation which enables the naturopathic physician to direct, advise, prescribe, dispense or apply food, water, roots, herbs, plants, lights, heat, color, exercises, active and passive manipulation correcting vital tissue, organs or anatomical structure by manual, mechanical or electrical instruments or appliances, or any and all other natural agencies that have been used in the past that are now in use, or that may be used in the future, to assist nature to restore a physiological and psychological interfunction for the purpose of restoring and maintaining a natural state of health, mentally and physically" A 1277 proposes to regulate the operation of clinics and dispensaries and to require their licensing by the state board of public health A 1321 proposes to penalize any person who by radio or any other broadcasting means asserts any fact concerning the cure of any ailment by the use of any drug or therapeutic treatment which is known by him to be untrue and is made with the intention of misleading A 1487 authorizes the director of institutions to establish the California Psychiatric Institute in San Francisco The institute is to

train physicians, psychiatrists, psychologists, nurses and the public in matters pertaining to mental health and to conduct research in the nature and treatment of mental and behavior disorders S 558, to amend the workmen's compensation act, proposes that the industrial accident commission, instead of directing an employee claiming compensation to be examined by a single physician, shall, on the request of the employer, direct the employee to be examined by a committee of physicians, composed of the physician attending the case, a physician named by the employer, and a physician named by the employee

### COLORADO

**New Address for State Society**—The Colorado State Medical Society and its journal are now housed in improved quarters at 537 Republic Building, Denver The journal reports that the society is now better able to serve its members

**Bills Introduced**—H 151, to amend the optometry practice act, proposes to omit the prohibition in the present law against licentiates using the title "Doctor" and to eliminate also the requirement that licentiates use no other title than optician or optometrist H 582, to amend the law relating to chiropractic, proposes that a license to practice chiropractic shall not authorize a licentiate to practice surgery or obstetrics, to prescribe drugs or administer anesthetics, or to treat disease or morbid conditions of human beings in any manner other than by palpation, nerve tracing and adjustment of vertebrae by hand A licentiate is to be permitted to use the title "Doctor of Chiropractic," "D C" and "Chiropractor" in connection with his name, but is not to use any other title or abbreviation to indicate that he is engaged in the practice of the healing art H 653 and S 541, to amend the laws relating to the practice of chiropractic, propose that applicants may not be licensed until they have been examined in anatomy and physiology by the state board of medical examiners and in the technic of chiropractic by a licensed chiropractor, selected by the board H 583 and S 375 propose to make it the duty of every physician, nurse, midwife or other person, in charge at the birth of any infant or having the care of the infant after birth, to treat its eyes with a prophylactic, approved by the state board of health as soon as practicable after birth and always within one hour If any redness, swelling, inflammation or gathering of pus appears in the eyes of an infant within two weeks after birth, then any person having care of the infant must report that fact to some licensed physician within six hours after discovery H 584 and S 374 propose to require that all pupils and teachers be immune to smallpox before they attend or teach school Immunity is to be evidenced either by having had smallpox, having been successfully vaccinated within five years, or having been vaccinated three times unsuccessfully H 784 proposes to abolish the division or department relating to venereal diseases, in the state board of health

### CONNECTICUT

**Hospital News**—A new addition, to cost \$500,000, will soon be started at St Vincent's Hospital, Bridgeport, it will provide 100 additional rooms as well as more extensive operating and x-ray facilities

**Bills Introduced**—S 76 proposes to repeal the present narcotic drug control act and to enact the uniform narcotic drug act H 1161, to amend the law requiring the annual registration of all practitioners of the healing art and of midwives and nurses, proposes to eliminate the fee now required in connection with annual registration

### GEORGIA

**Institute of Citizenship**—At a joint meeting of the Institute of Citizenship and the Georgia Press Institute, at Emory University, Atlanta, February 7-11, "The Press and Public Opinion" was the general subject for discussion Dr Morris Fishbein, editor of THE JOURNAL, spoke on "Public Opinion on Problems of Health" and conducted a round table on the subject The Institute of Citizenship was established at Emory University for the dissemination of knowledge of public affairs The Georgia Press Institute, established by the Georgia Press Association, was designed to assemble newspaper men and women, teachers and students of journalism, leaders in public affairs and others for lectures and conferences on subjects of interest to the press

### IDAHO

**Bill Introduced**—H 76 proposes a new osteopathic practice act Licentiates are to be granted the "right to practice the healing art as it is taught and practiced in recognized colleges of osteopathy" They are to be permitted to perform major surgery if they present proof that they have served

internships of one year in hospitals of standards acceptable to the board of osteopathic examiners and satisfactorily pass an examination to be given by that board. All osteopathic licenses are to have the same rights as physicians of other schools of medicine with respect to the treatment of cases of holding offices in public institutions or municipalities."

### ILLINOIS

**Bill Introduced**—H 225 proposes that all contracts of companies doing business in Illinois, insuring against bodily injury, disablement or financial loss, resulting from accidents, shall authorize the insurer to pay all claims of hospitals and physicians directly to them instead of to the injured person to whom such hospital and medical services have been rendered because of such accidents.

**Dr McClanahan Honored**—The Warren County Medical Society held a special meeting in Monmouth, January 19, in honor of Dr James M McClanahan, Kirkwood, who has completed fifty nine years of practice. More than 100 physicians from western Illinois and eastern Iowa attended. Eight physicians who had practiced fifty years or more were guests of the society. Henry B Young, Burlington, Iowa, Frank B Dorsey, Keokuk, Iowa, Julian E Camp, Augusta, James E Coleman, Canton, Isaac F Harter, Stronghurst, Edmund B Montgomery, Quincy, William W Williams, Quincy, and Joseph B Bacon, Macomb. On behalf of the society, Dr Harry L Kampen, Monmouth, presented to Dr McClanahan a watch and an engraved book, autographed by those present. Dr Ralph Graham Monmouth, president of the Warren County Medical Society, presided.

### Chicago

**Dr Martland to Give Hektoen Lecture**—Dr Harrison S Martland, chief medical examiner for Essex County, New Jersey, will deliver the ninth Ludvig Hektoen Lecture of the Institute of Medicine of Chicago, February 24, in the Chicago Woman's Club Hall, 72 East Eleventh Street. His subject will be "Recent Progress in the Medicolegal Field in the United States."

**Dr Pusey to Give Gehrmann Lectures**—Dr William Allen Pusey, emeritus professor of dermatology, University of Illinois College of Medicine, will deliver the Adolph Gehrmann Memorial Lectures at the Research and Educational Hospital of the college, March 1-3, on "History and Epidemiology of Syphilis." The subtitles of the lectures will be "History of Syphilis," "Development of Knowledge of Syphilis" and "Epidemiology of Syphilis." A dinner in honor of Dr Pusey has been arranged by the university, to be given at the Palmer House, March 2.

### KANSAS

**Bills Introduced**—S 239 and H 349 propose that in the distribution of the funds of a decedent's estate hospitalization expenses during the last illness and funeral expenses shall have priority over all other claims. Claims on account of medical services are to be subordinate to the claims noted but are to be coordinate with wages due servants and the expenses of administration and precede all other claims.

### MAINE

**Bill Introduced**—H 1013 proposes to create a state board for the practice of hairdressing and cosmetic therapy and to regulate those practices. Licensees are to be authorized, among other things, to remove superfluous hair from the body of any female person; the method to be employed being left apparently solely to the judgment of the licensee.

### MARYLAND

**Dinner to Dr Kelly**—Dr Howard Atwood Kelly, Baltimore, will be guest of honor at a dinner given at the Lord Baltimore Hotel by his friends February 20 in celebration of his seventy-ninth birthday. Dr Kelly is professor emeritus of bacteriology at Johns Hopkins University School of Medicine. He has been connected with the institution since 1889.

**Bills Introduced**—H 57 proposes to repeal the law regulating the possession and distribution of narcotic drugs and to enact the uniform narcotic drug act. S 54 proposes to require practitioners of medicine, dentistry, chiropody, chiropractic, naturopathy and osteopathy to pay annual license fees of \$15 to the clerk of the circuit court of the counties in which they reside.

**Dr Macleod Gives Herter Lectures**—Dr John J Macleod, regius professor of physiology, University of Aberdeen, Scotland, and a professor of physiology, Johns Hopkins

University School of Medicine, Baltimore, gave the twenty-first course of lectures under the Herter Foundation. Dr Macleod spoke on "Control of Carbohydrate Metabolism," January 23 and 25, and on "The Nervous System and Carbohydrate Metabolism," January 27.

### MASSACHUSETTS

**Lectures on Mental Hygiene**—The state division of university extension and the Massachusetts Society for Mental Hygiene are conducting the following courses in mental hygiene, each to consist of eight lectures:

Boston, beginning February 6, Human Relations and Mental Health. Brockton, beginning January 19, Personal and Social Aspects of Mental Hygiene. Leominster, beginning February 7, Mental Hygiene of Childhood and Adolescence. New Bedford, beginning January 20, Mental Hygiene of Childhood and Adolescence. Newton, beginning January 24, Understanding the Child.

**Cholecystitis of Typhoid Origin Reportable**—To give local boards of health jurisdiction over typhoid carriers, the state department of health declared cholecystitis a reportable disease, Dec 13, 1932. According to the state health officer, it was felt that the statutes as they were drawn could not be interpreted to refer to typhoid carriers. As a high proportion of carriers have a demonstrable pathologic condition of the gallbladder, it was felt that it was reasonable to assume that all these carriers had in reality a cholecystitis of typhoid origin. The action of the department was prompted by the existence of two carriers who refused to cooperate in any attempt to prevent further spread of their infection and who had caused repeated infection of their associates. Under the new ruling, local boards of health may adopt rules and regulations for the restriction or quarantine of such carriers.

**Health at Fall River**—Telegraphic reports to the U S Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended February 4, indicate that the highest mortality rate (22.6) appears for Fall River, and the rate for the group of cities as a whole, 12.1. The mortality rate for Fall River for the corresponding period last year was 14.1, and for the group of cities, 11.8. The annual rate for eighty-five cities for the five weeks of 1933 was 12.9 as against a rate of 12 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

### MICHIGAN

**Bill Introduced**—H 184 proposes to levy on practitioners of the healing art annual occupational taxes of 3 per cent of the balance remaining after subtracting \$4,800 from gross professional income.

**Roentgen Apparatus Installed**—An x-ray machine which will generate 1,500,000 volts of electricity, making it the largest apparatus of its kind on this continent, was being installed in Harper Hospital, Detroit, at a cost of \$50,000, according to the *Detroit Times* January 9. Its ray will have a potency of 725,000 volts. The equipment consists of a "cascade" of six castles on porcelain-insulated legs containing a series of thirteen transformers which will raise the regulation 110 volt Edison current to 1,500,000, and twelve condensers and rectifiers which will deliver a current at a constant potential of 725,000 volts to the tube. The tube will serve two patients at once, one directly in front of it and one underneath. Kenneth E Corrigan, Ph D, is the physicist in charge.

### MINNESOTA

**Bill Introduced**—S 595 to amend the workmen's compensation act proposes to add to the list of compensable occupational diseases carbon monoxide poisoning, dermatitis or any skin affliction, and silicosis or pneumoconiosis.

### MISSOURI

**Bills Introduced**—H 238 proposes to authorize the sterilization of certain socially inadequate inmates of state institutions. H 282 proposes to accord to physicians and hospitals treating persons injured in accidents liens on any claims, rights of action or moneys to which the injured persons may be entitled from the persons whose fault or negligence caused such injuries or from any insurer or the negligent persons or from any insurer of the injured persons. The lien, however, is not to attach to any claims arising under the workmen's compensation act.



## MONTANA

**Bill Introduced**—S 76 proposes to make it the duty of all physicians and other practitioners of the healing art who examine or treat a person with any disease declared reportable by the state board of health to report the fact to the county or local health officer having jurisdiction of the territory in which the case is found

## NEBRASKA

**Society News**—Dr Philip L. Romonek, Omaha, among others, addressed the Madison Six-County Medical Society, Stanton, in December, on "Reeducation of the Voice Following Complete Laryngectomy"

**Bills Introduced**—S 193 proposes that actions for malpractice may be brought only within one year from the date of the occurrence of the malpractice S 243, to amend the laws relating to the practice of chiropractic, proposes (1) to exempt chiropractic applicants from examination by the basic science board and (2) to define chiropractic as "that system which teaches that disease is caused by interference with the transmission of nervous energy and that health is restored by locating and removing such interference"

## NEW HAMPSHIRE

**Bill Introduced**—H 294 proposes a new workmen's compensation act Employees are not to be compensated for occupational diseases, except anthrax, lead poisoning, silicosis or diseases due to inhalation of poisonous gases An employer is to furnish reasonable medical, surgical and hospital services and supplies to an injured employee during the first four weeks of disability The industrial accident board may require an employer to furnish medical services for a period exceeding four weeks

## NEW JERSEY

**Practical Lectures**—The Jersey City Medical Center is offering during February the following series of practical lectures on Friday afternoons

Dr John J. Moorhead, New York Practice of Traumatic Surgery  
Dr Wells P. Eagleton, Newark How to Examine Cases of Fracture of the Skull and Their Immediate Treatment  
Dr Frederick C. Holden, New York Obstetrics and Gynecology  
Dr Chevalier Jackson, Philadelphia, Hoarseness

**Society News**—Dr William D. Stroud, Philadelphia, discussed treatment of heart disease at the December meeting of the Gloucester County Medical Society, Woodbury—Dr Walter L. Niles, New York, addressed the Passaic County Medical Society, Paterson, Dec 8, 1932, on diagnosis and treatment of kidney diseases—Dr George T. Pack, New York, addressed the Paterson Clinical Society, Paterson, January 19, on "Indications for Surgery and for Radium in Treatment of Cancer"

**Bills Introduced**—A 106, to supplement the medical practice act, proposes to limit appointments to the board of medical examiners to persons whose names are submitted by the medical society of New Jersey The bill also states the reimbursement and compensation to be paid members of the board and the method and distribution of the funds acquired by the board A 146 proposes that public school teachers may be subject to thorough physical examinations on orders from the proper boards of education If the examinations show the existence of communicable diseases the teachers are to be ineligible for further service until satisfactory proof of recovery is furnished A 144 proposes a thorough medical examination as a condition precedent to admission to state normal schools and teachers' colleges or to eligibility for teachers' certificates

## NEW YORK

**Licenses Stolen**—Dr Virginia Murray Palmer, Scarsdale, N Y, recently reported that her licenses to practice medicine in New York and in California had been stolen from her automobile Dr Palmer is a 1917 graduate of Stanford University School of Medicine, California

**Bill Passed**—S 142, proposing to amend the medical practice act so as to permit the board of regents to restore a license to a person whose license has been forfeited by conviction of a felony, if such person is pardoned by the governor or by the President of the United States of the felony of which he was convicted, has passed the Senate

**Bills Introduced**—S 623 and A 784 propose to authorize the certification of qualified psychiatrists by a board of examiners in the mental hygiene department The board is to be composed of the Commissioner of Mental Hygiene, the Commissioner of Correction, and the head of the Department of Psychiatry of a medical college in the state The board is to grant certificates to qualified persons, who must be physi-

cians with five years' experience in practice and who have had three years' full time practice in institutions for mental defectives or have devoted five years to a practice confined wholly to the care of persons suffering from nervous and mental diseases A 772 proposes to make it unlawful to distribute bichloride of mercury in tablet form, except in the form of tablets of distinctive shape and color, labeled "poison" on each tablet, and in bottles of a distinctive shape and color, conspicuously labeled "poison," in red letters S 673, to amend the pharmacy practice act, proposes that every place in New York City in which drugs, chemicals, medicines, prescriptions or poisons are retailed or compounded shall be deemed a pharmacy, within the meaning of the act, and be under the personal supervision of a registered pharmacist

## New York City

**Bulletin Becomes a Quarterly**—The *Weekly Bulletin* of the New York City Department of Health was discontinued as a weekly publication with the issue of Dec 31, 1932, and will henceforth appear quarterly The bulletin had appeared in its present form since 1913, and has been edited by Dr Charles F. Bolduan since Feb 1, 1914

**Society News**—A symposium on surgery was presented before the International and Spanish-Speaking Association of Physicians, Dentists and Pharmacists, January 20, by Drs Dean Lewis, Baltimore, President-Elect, American Medical Association, Robert H. Ivy, Philadelphia, Fred H. Albee, John J. Moorhead and Jacob M. Gershbarg At the recent annual meeting Dr Gershbarg was elected president and Dr Reginald Burbank, general secretary Drs Albee, Sigmund Freud of Vienna, and Juan Sacasa, president of Nicaragua, were elected vice presidents This society now has branches in seventeen foreign cities—Dr Burrill B. Crohn, Brooklyn, gave the ninth Friday afternoon lecture of the New York Academy of Medicine, January 20, on "Indications for Conservative Treatment of Gallbladder Disease"—Dr Carl Boettiger addressed the Medical Society of the County of Queens, January 20, on "Treatment of Anemia as Influenced by Recent Advances in Hematology"

## NORTH CAROLINA

**Bill Introduced**—H 268 proposes to authorize the state board of health to promulgate and enforce rules and regulations governing the practice of midwifery in the state and to prohibit persons from practicing midwifery unless licensed by the board

## NORTH DAKOTA

**Bills Introduced**—S 138, to amend the dental practice act, proposes, among other things, to authorize dentists to sign death certificates H 117, to amend the chiropractic practice act, proposes to require applicants for licenses to practice chiropractic to be graduates of standard high schools, to have two years of university work, and to have graduated from colleges of chiropractic wherein the resident course of instruction is not less than three years of eight months each The bill seeks to permit licensed chiropractors to adjust any displaced tissue of any kind or nature and to practice physiotherapy, electrotherapy and hydrotherapy as taught by chiropractic schools and colleges, but not to prescribe for or administer any medicine or drug, included in materia medica, to be taken internally, nor to perform any surgery, nor to practice obstetrics, nor to use the title physician or surgeon S 169 proposes to give hospitals that are supported in whole or in part by private charity and treat patients injured through the fault of other persons, liens on all rights of action, claims, judgments, settlements or compromises accruing to the injured persons because of their injuries

## OHIO

**Hospital News**—Four new buildings and two additions to former structures were completed and opened for use at the Veterans' Administration hospital at Chillicothe, Ohio, Nov 17, 1932 The hospital's capacity was increased from 650 to 850 by the additions, which represent an outlay of \$600,000

**Bills Introduced**—S 135, to amend the optometry practice act, proposes to require licentiates to practice only in their own names and to forbid them from having professional connection with any person, firm, partnership, association or corporation which holds itself out as offering optometric services or facilities S 129 proposes to create a board of barber examiners and to regulate the practice of barbering, but the application of cosmetic preparations, antiseptics, powders, oils, clays or lotions to a scalp, face or neck for the treatment of physical or mental ailments or diseases shall not constitute the practice of barbering

**Dr Sawyer Honored.**—Colleagues of Dr John Pascal Sawyer, professor emeritus of therapeutics and clinical medicine at Western Reserve University School of Medicine, Cleveland, gave him a testimonial dinner at the Union Club, Dec 14, 1932. Speakers of the evening were Dr Torald H Sollmann, Frederick C Waite, Ph D, Dr John Dickenson and Rev C H LeBlond, director of Catholic Charities of Cleveland. Winfred G Leutner, Ph D, acting president of Western Reserve University, was toastmaster. Dr Sawyer became instructor in physiology at the university in 1888, two years after his graduation, and served in various capacities until June, 1932, when he resigned. He was a member of the staff of Charity Hospital for thirty-seven years.

#### OKLAHOMA

**Bill Introduced.**—S 208 proposes a new workmen's compensation act. Occupational diseases are not to be compensable. An employer is to provide an injured employee with such medical, surgical or other attendance or treatment, and nursing and hospital services as may be necessary during fifty days after the injury, and for such time thereafter as in the judgment of the state industrial commission may be required, but not to exceed \$500 in cost. An employee is to be permitted to choose his own physician only when the employer fails or neglects to provide a physician within a reasonable time after knowledge of the injury.

#### OREGON

**Bills Passed.**—S 127, to prohibit the dispensing of drugs to the public by means of automatic vending machines, has passed the senate. H 263, proposing to create a board of dental hygiene examiners to regulate the practice of dental hygiene and to authorize such licentiates "to remove calcareous deposits, accretions and stain from the exposed surface of teeth, and to prescribe and apply any ordinary wash or washes of a soothing character, but not to perform any operation on the teeth or other tissues of the oral cavity," has passed the house. H 127, proposing that all applicants for licenses to practice medicine, osteopathy, chiropractic, naturopathy or any other system of the healing art, as a condition precedent to examination by their respective licensing boards, be examined in physiology, anatomy, pathology, chemistry and hygiene by a state board of higher education, has passed the house.

**Bills Introduced.**—H 361, to amend the workmen's compensation act, proposes to permit employers with the approval of the industrial commission, to enter into contracts for the furnishing of first aid, transportation, medical and surgical attendance and hospital accommodations to injured employees, at the expense of the industrial accident fund. The industrial commission is to be authorized to formulate a standard form of contract and to establish rates to be paid under it. S 124, to amend the workmen's compensation act, proposes that "no claim for medical or surgical attendance, hospital accommodation shall be allowed unless the claim shall have been filed with the (industrial accident) commission within three months after the completion of such service." S 159 proposes to create in the state department of agriculture a division of public health which is to be invested with and succeed to all the powers and duties now exercised by the state board of health.

#### PENNSYLVANIA

**Bill Introduced.**—S 224 proposes to authorize the department of public instruction to license qualified persons to practice chiropody or podiatry. "Chiropody or podiatry is the diagnosing medical surgical and mechanical treatment of all ailments of the human foot except the correction of deformities requiring the use of the knife amputation of the foot, or toes, or the use of any anesthetic other than local. Chiropody or podiatry shall not be construed to include the fitting, recommending or sale of corrective shoes arch supports or similar mechanical appliances by retail shoe dealers."

**Society News.**—Drs William F Herron and William S McIlroy among others addressed the Pittsburgh Academy of Medicine January 24 on 'Recent Studies with Liver Extract in Pernicious Anemia'.—Dr William H Guy addressed the Pittsburgh Pediatric Society February 10 on 'Management of Infantile Eczema and Neri'.—Drs Marc W Podnie, William port, and Ross K. Childerhouse Allenwood addressed the February meeting of the Lycoming County Medical Society. William port on 'Some Aspects of Thyroid Disease and Pneumococcosis and Its Relationship to Pulmonary Tuberculosis' respectively.—Dr Joseph H Barach Pittsburgh addressed the Columbiana County Medical Society, January 10 on 'Essential and Malignant Hypertension'.

#### Philadelphia

**Thomas Memorial Lecture.**—The annual B A Thomas Memorial Lecture of the Philadelphia Urological Society was delivered by Dr Frank Himman, San Francisco, January 23, on "The Pathogenesis of Hydronephrosis."

**Gerhard Medal Awarded.**—The William Wood Gerhard Medal of the Pathological Society of Philadelphia was awarded to Dr Frank C Mann, Rochester, Minn, at a meeting of the society, February 9. Dr Mann delivered an address on "Experimental Pathology and Pathologic Physiology of the Liver."

**Session on Medical Economics.**—The Philadelphia County Medical Society held the second session of the year devoted to medical economics, February 8. The following program was presented:

Dr Iago Galdston New York Medical Economics and the Medical Information Bureau of the New York Academy of Medicine  
Ambrose Hunsberger, Ph G Pharmacy Endorses Medical Control of the Field of Medical Care  
Dr Edward A. Schumann Relation Between Hospital Managers and Staff Members  
Dr James D Schofield Hospital Contract Practice  
Dr Leonard Averett Socialized Medicine in Germany and Austria.

#### SOUTH CAROLINA

**Bill Introduced.**—S 161 proposes to authorize the sexual sterilization of certain insane, feebleminded and epileptic persons, and of idiots and imbeciles, when inmates of state institutions.

#### SOUTH DAKOTA

**Bill Introduced.**—H 76 proposes to accord to physicians, nurses and hospitals, caring for persons injured through the fault of another, liens on the claims and causes of actions and judgments or settlements accruing to the injured persons on account of such injuries.

#### TEXAS

**Bill Introduced.**—H 92 proposes to abolish the division of child welfare in the board of control and to assign its duties to the state board of health.

#### WASHINGTON

**Bills Introduced.**—H 196 proposes to accord physicians, nurses and hospitals, treating persons injured through the fault of another, liens on all claims, rights of actions or money to which the persons injured are entitled because of their injuries. S 178 proposes a new medical practice act differing radically from the present act. A board of examiners of nine members is to operate independently of the director of licenses, in examining and licensing applicants and in revoking licenses.

#### WEST VIRGINIA

**Bills Introduced.**—H 158 proposes that every child entering a public or private school for the first time be examined by a licensed physician to ascertain whether the child is suffering from any communicable disease or any defect. H 269, to amend the medical practice act proposes that the provisions of the act "shall not be construed to apply to persons treating human ailments by prayer or spiritual means as an exercise or enjoyment of religious freedom." H 162, to amend the workmen's compensation act, proposes to make compensable silicosis 'among employees on sand mines'.

#### WISCONSIN

**Personal.**—Dr Kate Kelsey Clark, Cable, was the guest of honor at a community dinner, Dec. 20, 1932, at which she was presented with a radio. She is said to have practiced in the district thirty years.

**Hospital News.**—Stark Hospital, a new part of the Milwaukee Children's Hospital built from a fund of \$125,000 left in trust by Mr Charles G Stark, who died in 1908, was recently opened. Mrs Stark, who died in 1927, left \$63,000 for maintenance of the hospital.

**Medical Building Dedicated.**—The Harriet L Cramer memorial building of the Marquette University Medical School Milwaukee was dedicated January 4. Dr William Gerry Morgan dean George Washington University School of Medicine Washington D C, and Richard F Scammon Ph D dean of medical sciences, University of Minnesota, were the principal speakers.

#### WYOMING

**Bill Introduced.**—S 81 to amend the medical practice act proposes to increase from \$25 to \$50 the fee required of applicants for licenses to practice medicine or osteopathy.

## GENERAL

**Medical Bills in Congress—Change in Status** The War Department appropriation bill, H. R. 14199, has been reported to the Senate. The Senate Committee on Appropriations recommends that the provision inserted by the House of Representatives, forbidding further enrolments in medical, dental and veterinary units in the Reserve Officers' Training Corps, be stricken out. If the Senate sustains its committee, the matter will be adjusted in the conference committee of the Senate and the House.

**Heart Disease Heads the List**—Provisional figures on deaths in the United States in 1931, announced by the Bureau of the Census, January 26, show that there were 1,322,587 deaths, or a death rate of 1,107.5 per hundred thousand of population. This is a decrease from 1930, when there were 1,343,356 deaths, a rate of 1,133.1 per hundred thousand. The five leading causes of death were diseases of the heart, from which there were 253,985 fatalities, cancer, 118,141, nephritis, 104,119, cerebral hemorrhage, 99,376, and pneumonia, 96,973. The figures for heart disease and cancer were slightly larger than those for the preceding year. There were 31,701 deaths from influenza in 1931, compared with 23,066 in 1930. Deaths from automobile accidents amounted to 30,042, with 1,651 additional fatalities from train and automobile collisions and 419 from street car and automobile collisions.

**Society News**—The tenth annual meeting of the American Orthopsychiatric Association will be held in New York at the Hotel Pennsylvania, February 23-25. Among speakers listed on the program are

Edgar A. Doll, Ph.D., Vineland, N. J., Birth Lesion as a Category of Mental Deficiency

Dr. Matthew Molitch, Jamesburg, N. J., and August K. Eccles, Serum Calcium in Juvenile Delinquents

Dr. Joseph J. Michaels, Boston, and Miss Sylvia E. Goodman, Incidence and Intercorrelations of Enuresis and Other Neuropathic Traits in So Called Normal Children

Dr. Lawson G. Lowrey, New York, Treatment of Behavior Problems

Dr. David Levy, Use of Play Technic as Experimental Procedure

Dr. Ira S. Wile, New York, is president of the association and Dr. George S. Stevenson, New York, secretary. The third annual conference of training school psychiatrists and psychologists will be held on the two days preceding this meeting.

**Western Hospital Meeting**—The seventh annual meeting of the Western Hospital Association will be held in Long Beach, Calif., February 22-25. The tentative program includes as speakers Drs. George F. Stephens, Winnipeg, Manit., on "Inevitable Changes in the Hospital World", Benjamin Black, Oakland, Calif., "Relative Responsibility of Voluntary and Tax-Supported Hospitals," and Rev. Robert E. Warner, Spokane, "Practical Suggestions for the Economic Relief of Hospitals." The Friday afternoon session will be a symposium on hospital and medical service for persons of limited means, sponsored jointly by the California Medical Association and the Western Hospital Association. The speakers will be Mr. R. D. Brisbane, Sacramento, and Drs. Walter M. Dickie, Berkeley, George G. Reinle, Oakland, Lyell C. Kinney, San Diego, Paul A. Quaintance, Los Angeles, and John H. Graves, San Francisco.

**Future Costs of Veterans' Benefit**—Estimates of future expenditures for war veterans under existing laws will reach a peak in 1958 with a total of \$1,081,200,000, according to computations presented to the congressional committee studying veterans' relief laws, January 23, by Brig. Gen. Frank T. Hines, administrator of veterans' affairs. Of this amount, \$133,100,000 will be needed for hospitalization and domiciliary care. An artificial peak will be reached in 1945 because of the payment of adjusted service certificates which will become due in that year. Another computation based on anticipated changes in laws in keeping with past experience was also presented by General Hines showing that under those conditions the peak will come in 1950, aggregating approximately \$1,913,400,000. General Hines called attention to the danger of attempting to estimate costs in this manner beyond a period of five or ten years, as the many factors involved make such projections highly speculative. The administrator recently recommended to the committee that the government reduce the annual expenditures by extending present hospital units instead of constructing new hospitals, he estimated that this policy would save approximately a billion dollars over a period of thirty-three years. Among other changes, General Hines recommended withdrawal of disability allowances and compensation for veterans not 50 per cent disabled, revision of the law permitting retroactive awards on compensation and of the emergency officers' retirement act to eliminate persons without six months' service and who were not actually injured or diseased in service.

## Foreign Letters

## LONDON

(From Our Regular Correspondent)

Jan 2

## Sir Robert Jones

Sir Robert Jones, the orthopedic surgeon, has Llanfairfechan, Wales, at the age of 74. Born at the same country, he was educated at the Universities of I and Liverpool and was apprenticed to his uncle Hu Thomas, a general practitioner in Liverpool with a orthopedics, derived from his father, who was a bo Thomas had no hospital appointments, but he had original mind and high manipulative skill. While the of his day were treating tuberculous joints with the showed that prolonged rest, obtained by means of tl which he manufactured himself, would give much bette His name is immortalized in "Thomas's splint." J pupil and successor of Thomas, soon showed himself great pioneer in orthopedics. He was appointed su two Liverpool hospitals. He maintained his uncle's of a free clinic at his house on Sundays for poor person ing from injuries and deformities, and in time it became for the surgeons of the world. Great as a clinician, J still greater as a teacher. He had all the qualities of —an extraordinary grasp of principles, great luc expounding them, and remarkable inventiveness in apparatus. Perhaps his best work was done in the treatment of infantile paralysis, in which he showed th better results could be obtained by preventing, by n splinting, the weakened muscular groups from being s by their stronger opponents, from the moment of the di ance of acute symptoms. Thus the paralytic disabili deformities, which were so common, would be render paratively rare. As in the case of Lister, his fame more rapidly in other countries, and particularly in A than in England. Eventually he was regarded by all supremely great orthopedic surgeon and teacher.

## HIS WAR WORK

In 1913 he was president of the orthopedic section International Congress of Surgeons, held in London. the war came he was presented with a great opportu extending his activities. He recognized that the treat gunshot and other skeletal injuries left much to be. The victims of ununited or malunited fractures pour this country and were scattered in the hospitals and all over the country. He brought about their segregat specially staffed and specially equipped centers. Th center was established at Shepherd's Bush (London) with the help of enthusiastic assistants, many of them cans, he did great work. These orthopedic centers ev had 30,000 beds. As a fruit of the experience gained there was published three years after the war the "Orth Surgery of Injuries," which Jones edited while it was by his colleagues at the centers. In the preface he "The orthopedic surgeon should be governed by sound principles and not become entangled in detail. Function goal, and he should know, and be able to practice, t way of obtaining it. The operation means to him o beginning of his problem, and his most brilliant exploit, directed to a functional success, should be a reproach arranged conferences of surgeons at the various centers the knowledge of all could be pooled. His orthopedic in America, particularly Goldthwait and Osgood of Bos appreciated him that they "lent" him twenty-five Ar surgeons even before the United States came into th

During the war the British Orthopaedic Association was founded on the initiative of Jones and Osgood. Jones was its president from 1920 to 1925. One of his great triumphs was the introduction of the Thomas splint for the first aid treatment of fractures of the femur on the battlefield. This measure reduced the mortality considerably and has now been adopted in civil ambulance work.

#### BENEFactor OF INJURED AND CRIPPLED

After the war he was the leader in the formation of the Central Committee for the Care of Cripples, an organization devoted to local county orthopedic treatment, for which he lectured and toured unceasingly. As a surgeon he was unsurpassed in technique and clinical judgment, yet he had little use for the operation except as a means to an end. His delight was the dissemination of his great experience and knowledge, by both the spoken and the written word. The numerous papers from his pen were written on Sunday afternoons when he had some time to spare, he said. There is scarcely an operation or treatment in orthopedic surgery in which he has not established a classic method. He was the founder of orthopedic surgery as it exists in England today. His most important book, written in conjunction with Lovett of Boston, was a "Textbook of Orthopaedic Surgery." He also wrote the section on orthopedic surgery in Binnie's "Surgery." Fluent in speech, he had a magnetic personality, radiating kindness to all—colleagues, pupils and patients. On his seventieth birthday his friends entertained him and presented him with the "Robert Jones Birthday Book." In the preface Lord Moynihan wrote:

Few men have ever possessed in so radiant a degree the genius for friendship. No one can be long in his company without realizing the sweet simplicity of his character and the greatness of his heart." Truly a great and much beloved teacher has passed away, whose name has been placed beside those of Lister and of Ross. It is true that he did not, like these great men, make a striking discovery, but he raised the whole level of orthopedic surgery far above where he found it and so became the benefactor of the injured and the crippled all over the world.

#### The British Medical Association and Medical Education

In previous letters, the discussion going on with regard to medical education has been reported. The main criticism is that the medical curriculum is overloaded. The British Medical Association has decided to take a hand in the discussion, on the ground that, composed as it is of men engaged in every branch of medical practice it could make a unique contribution.

The gaps between the education of the medical student and the realities of his professional life can be closed only with the help of those who have the advantage of the considered opinion of the bulk of general practitioners. It is proposed to set up a special committee to report on (1) the conditions required for entrance on medical studies (2) the content of the curriculum (3) the position of the various subjects and their proper relation to one another (4) the nature of the examination and other tests that should be satisfied prior to graduation (5) whether and to what extent postgraduate education or experience should be required prior to practice.

The following questionnaire has been drawn up for circulation among the members of the association. 1 Should the registration age of medical students be raised to 18 years? 2 Should the standard of educational requirements for registration be higher? 3 Ought general biology be a compulsory subject for instruction and examination before entry on medical studies? 4 Are the pre-registration instruction and examination in physics and chemistry conducted on right lines? Is the instruction directed too much to technical detail and not primarily to scientific principles? 5 In what way can instruction in physics, chemistry and biology in their application to medicine

be best conducted? 6 What improvements in the teaching of anatomy and physiology would make their application to clinical studies more practical? 7 When and for how long in the curriculum should such subjects as materia medica, pharmacology, forensic medicine and general pathology be best taken? 8 How early in the curriculum should clinical work begin and what should be its character at this stage? 9 Ought the teaching of preventive medicine be given a separate place in the curriculum or is it sufficient that the preventive aspects be emphasized throughout the general teaching? 10 How far should some clinical experience be introduced into the first two (or three) years of the curriculum? 11 Should disease in children (including infant hygiene) be made a separate subject in the curriculum? 12 What limits should be placed on the teaching of operative surgery in the undergraduate curriculum? 13 How far should the special subjects—public health, psychology, medicine, ophthalmology, otorhinolaryngology, dermatology, and so on—be carried on in the ordinary curriculum? 14 Are any changes needed in the teaching of the main subjects of medicine, surgery, obstetrics and gynecology? 15 Should there be any systematic instruction in the conduct of practice or in medicopsychologic questions? 16 How can facilities be best afforded for the use in medical education of the clinical material in special and municipal hospitals? 17 Ought there to be single-portal examination for registration as a qualified physician? 18 Should there be a further period of, say, one year after passing a qualifying examination as resident medical officer in an institution or hospital or as assistant to a physician in practice before full license to practice? 19 Any further requirement as to postgraduate work?

#### PARIS

(From Our Regular Correspondent)

Jan. 4, 1933

#### Selecting a Site for New Faculty Buildings

The Faculté de médecine de Paris, having often complained of its cramped quarters, which in view of the constantly increasing number of students have become inadequate, received from the Rockefeller Foundation the offer of a gift of \$6,000,000 for the construction of a new Faculté de médecine, on condition that the French government furnish an equal sum. It was impossible to erect the new buildings on the present site along the Boulevard St. Germain, in the center of Paris, where real estate commands an enormous price. When a different site was sought, consideration was given to the site occupied by the Halle-aux-vins, on the bank of the Seine farther to the east. The Halle-aux-vins in that case would have been moved outside the city. The wine merchants refused to move. Attention was then given to a large unoccupied area south of the city, which was being used for a military aviation school. The suggestion of this site brought protests from the professors, students, medical libraries and the dealers in surgical instruments that had been grouped for centuries about the present Faculté de médecine. This site was several miles away from the principal teaching hospitals. Attention was then given to a tract occupied by the Ste. Anne psychopathic hospital, located to the south in the vicinity of the University City. It was not long before protests were heard. Professors think the location is still too remote and their opinion is shared by the merchants. Furthermore it would be necessary to rebuild a much larger psychopathic hospital elsewhere for it is now inadequate owing to the increasing number of insane persons. The council of the Faculté de médecine is placed in an embarrassing position by the gift of the Rockefeller Foundation, especially in view of the state of the French treasury. The present buildings of the Faculté de médecine are only fifty years old, and it would suffice to add further stories or erect annexes. In short the council appears disposed to postpone until now.

propitious times the realization of the generous proposal of the great American philanthropist. Attention has been called also to the fact that at Lyons the magnificent university buildings erected with the same aid but located too far from the center of the city are already revealing grave disadvantages by reason of their remoteness. The students are attending their lectures less regularly on account of the time required to go to and from.

### The Origin of Lichen Planus and Psoriasis

The Société des médecins des hôpitaux de Paris was interested recently in two original communications by Jausion and Guillaud-Vallee, who have established through a large number of observations that all persons affected with lichen planus or with psoriasis present the reactions of a mycotic allergy. The coexistence of an epidermophytosis and even of a trichophytosis is not rare in such patients. Lichen buccalis is produced by any contact of the mucous membrane with the mycelian antigen. The tricho-epidermophytic skin reaction was found to be positive in all cases of cutaneous, mucosal or mixed lichen examined by Jausion thus far. All the patients were either cured (nineteen) or greatly improved (two) by injections of a polymycotic vaccine. The same observations were made with respect to psoriasis in the large majority of cases examined by Jausion. Fifty-four cases were carefully observed. Thirty-seven (68 per cent) of these patients were, at the same time, carriers of inguinal epidermophytosis or mycotic intertrigos, forty-four (80 per cent) reacted strongly positively to a mycotoxin, forty-five of these cases of psoriasis yielded to mycovaccinal treatment. Twenty-nine patients were completely cured by means of the polymycotic vaccine alone, after a long period of treatment (from fifty to seventy intramuscular injections, entirely painless, however, and without any general reaction). Thus psoriasis often manifested itself as a mycosis but more often as an epidermophytid. Other antigens may, nevertheless, be a factor (streptococcal toxin). But parakeratosis psoriasiformis is always sterile. Psoriasis is, then, a cutaneous reaction, something like the response of a parakeratotic diathesis to various antigens, chiefly of mycelian origin. That explains why it may disappear as a result not only of chemotherapy but also of specific vaccine therapy (polymycotic vaccines).

### BERLIN

(From Our Regular Correspondent)

Jan 2, 1933

### Blood Tests to Establish Paternity

At a recent session of the Berliner Medizinische Gesellschaft, three speakers addressed the assembly. Dr. Fritz Schiff, director of the bacteriologic department of the Krankenhaus Friedrichshagen, Professor Müller-Hess, director of the University Institute for Legal Medicine, and Prof. E. Unger, surgeon to the Rudolf Virchow-Krankenhaus.

Schiff discussed the general basis of the theory of the blood groups, as it was set up by Landsteiner, twenty-five years ago. Of the specific characters of the blood, only four were known until recently, although these four have been found also in other body fluids, such as gastric juice and saliva, that is of criminologic importance, as Müller-Hess brought out later, since the blood groups can be ascertained from the cigaret stubs of suspected persons. Recently three other specific characters of the blood have been discovered. Two of these—termed M and N—are serologically sharply distinguishable characters, which are fully developed in the new-born and are subject to precise "laws" of hereditary transmission. The serologic paternity test can now eliminate every third man wrongly charged with being the father of a given child, whereas formerly only every sixth man could be eliminated. In case of a mix-up of children or wilful substitution of children, in two out of three cases a serologic examination is now practical. For blood transfusion the new factors have no importance, if it is a ques-

tion of a first transfusion. But in the case of repeated transfusions the new method may aid in avoiding unpleasant reactions.

Müller-Hess emphasized that the law does not compel a person to submit to a blood test. The government of the Free State of Saxony has declared that a refusal to permit a blood test must not be construed as a reflection on the accused. Paternity diagnosis with the aid of a blood test is most important in suits brought against alleged parents for the nonsupport of illegitimate children. In such cases, such proof must be furnished that, in view of the evidence, it is impossible that the man concerned can be the father of the child. Whether the blood test is such as to guarantee the conception of "evidently impossible" was declared by experts and jurists to be doubtful. Nevertheless, for several years, the blood test has been adduced in many instances as evidence.

In criminal law there has been less hesitation in using this procedure to establish facts, because here the principle of the liberal weighing of evidence holds good. Here the blood test may be decisive, particularly in charges of perjury against mothers who have falsely accused a man of being the father of her child and in case of criminal substitution and abduction of a child. From the criminologic point of view, the most importance attaches to the determination of blood groups from blood spots.

Unger gave an account of blood donor organizations and referred to the methods in use in other places, especially New York. In Berlin only a few hospitals have donors readily available. There is, however, a central in the Virchow-Krankenhaus, and the municipal health service constitutes a clearing house of information in regard to available blood donors. Unger demonstrated his simple technic of blood transfusion but warned that blood transfusions must not be employed unless the indications are fully established.

### Infantile Paralysis in Germany

The Deutsche Vereinigung für Krüppelfürsorge has published the following proclamation:

Infantile paralysis has been more prevalent in Germany, this year, than ever before. Along with the necessary measures for the prevention of a spread of this infectious disease, and also for its early detection and treatment, the orthopedic care after the appearance of paralysis must not be neglected. Up to October 22, 3,064 cases of the disease had been reported in Germany. These cases concern almost exclusively children and juveniles, with more or less extensive and very often also permanent lameness. Timely orthopedic treatment exerts a decisive influence on the later fate of crippled patients, the bodily injuries being thereby eliminated or rendered less serious, and, above all, secondary crippling effects, often of a severe nature, are prevented. Aside from the orthopedic treatment, care must be taken that the crippled child receives a thorough educational training that will fully develop his mental powers and his social capacities. The directorate of the Deutsche Vereinigung für Krüppelfürsorge demands that the general practitioners, the pediatricians and the neurologists summon an orthopedic specialist in every case of infantile paralysis. It requests all physicians to report all lamed or crippled patients to the proper "Jugendamt" as cripples. (Notification is obligatory in Prussia, Brunswick, Bremen and Schaumburg Lippe, and should be made compulsory in the other *länder*.) It asks that the public welfare authorities immediately adopt measures to secure a complete list of this year's victims of infantile paralysis in the cities and the rural districts and see to it that all these victims are examined by the *landeskrüppelarzt* (state orthopedist). Furthermore, it expects the welfare leagues of the local districts and of the various *länder* to give those who are crippled by reason of infantile paralysis and are in need of assistance the advantage of whatever welfare measures are found to be necessary. Those who need institutional care find the most satisfactory aid in the homes for cripples, since these have had extensive experience in dealing with such cases and have at their disposal the most suitable clinical and pedagogic equipment.

### Statistics on Sport Activities

The federal commission on physical training has ascertained that there are in Germany about 6,000,000 active devotees of athletic sports. Thirty years ago there were only 800,000. The curve mounted rapidly up to 1914, and since 1918 it has leaped upward, so that it is expected that by 1936, when the eleventh Olympian contest is to be held here, 8,000,000 active participants in sport activities will be found. As there are 12,000,000 Germans ranging in age from 15 to 25, it is assumed that every



third person, considering both sexes, is actively engaged in some form of athletic sport. It appears that the economic crisis has been unable to check this development.

#### Twins Born at Midday

At the instance of the federal bureau of statistics, Privatdozent von Verschuier of the Kaiser Wilhelm institute for anthropology and hereditary research has been investigating the question as to the time of day at which twin births most frequently occur. From an examination of his own cases and the books of the recorder's office in Berlin, Verschuier reached the conclusion that most twin births occur around midday, according to the investigations of the Leipzig gynecologist Professor Bellheim, most births in general occur during the night. As to the seasons in which twin births are more frequent, no conclusions could be reached.

### BUDAPEST

(From Our Regular Correspondent)

Jan 7, 1933

#### Is a University Professor a Specialist?

Dr B L Gaston Forneth has been appointed director of the medical clinic of the Debreczen University, whereupon he applied to the municipal government to be registered as a specialist. As his application was in the form of an ordinary letter, the council requested him to send in the customary credentials. The professor replied that he desired to withdraw his application. Nevertheless, the city management enrolled him in the register of specialists, arguing that if one has been appointed the director of a university clinic for internal diseases he is certainly fit to be registered as a specialist. The city medical officer, Dr Alexander Lang, however, appealed against the registration, saying that the professor did not have the two years clinical practice that the law prescribes. The City Council passed the appeal on to the Budapest ministry of health, with the remark that it does not seem necessary that a university professor whom the ministry of instruction appointed be bothered with proving his clinical practice, as it is certain that he has practiced that much. The ministry of health decided that the rigid observance of the law is a citizen's duty and that no one can be exempted. The professor can easily prove having had clinical practice for two years and the demand to observe a form prescribed by the law is no offense.

#### Birth Control in Hungary

At a recent meeting of the Royal Medical Society, Dr Heinrich Derera spoke on the necessity of a change of the birth control law now in force. He said that those officials who think of nothing but the "preservation of the nation" without regard for the present critical economic conditions render a hardship on numerous families. Questions must not be evaded when their proper solution would preserve the health of millions of Hungarian women as well as the happiness of family life.

Physicians, said Derera, often see much harm originating in the incorrect application of the birth control law. The majority of women who consult gynecologists suffer from mental and physical changes the cure of which is often impossible although they could have been prevented by prophylactic measures. With sick women a nation cannot be upheld. Abroad medical journals, sociologists and even the clergy deal with this question and try to solve it. In Germany Professor Stöckel deals with the methods of birth control in his university lectures. The Weltbeförderungskonferenz, the International Birth Control League, the Internationale Gesellschaft für Sexualforschung and the Weltliga für Sexual Research all attribute great significance to the proper use of contraception. In the interest of the public it is necessary that the leadership in the birth control movement remain in the hands of medical institutions, lest the advertising of contraceptives threaten the

moral and physical health of the people. Dr Dera urged the establishing in Hungary of welfare centers, where women may be taught properly the methods of contraception. He appealed to the government to withdraw the order prohibiting the importation of contraceptive drugs, so that ethical physicians may be able to prescribe them when they deem it necessary.

#### The Strike of Junior Physicians

Thirty-six physicians of the Budapest Jewish Hospital who received no pay for their services went on strike. The leaders of the medical profession in Hungary held that medical work cannot be done without adequate remuneration. The young physicians did their best to induce the board of the Jewish community to give at least 50 pengo (\$20) a month to the assistant physicians but the board argued that, owing to the financial circumstances of the community, they are unable to grant their request. The strike lasted for several weeks. Finally the medical association and the board came to an agreement that from Nov 1, 1932, the assistant physicians will get a salary. At the same time it was agreed that because of the strike none of the physicians should be punished. The board of the hospital created five paid assistant positions on condition that the salary is not to be paid by the hospital but from a fund raised from the fees, paid by the private patients of physicians-in-chief, treated in the paying wards of the hospital. The rest of the young physicians acquiesced, realizing that their service in the hospital is only temporary and pertains to their studies. However, since the strike the thirty-six physicians have been removed in groups of five and ten in an unusual way. The white uniforms of some of the junior physicians were taken away by servants, who told them that they are not entitled to come to the hospital any more. Another young physician, with ten years of service, while on duty was told by the assistant superintendent of the hospital that he had no right to wear the white uniform. The young physicians went to the medical association to report these incidents, as the board had agreed not to punish the doctors who went on strike. The medical association called a special general meeting to deal with the situation.

### BELGRADE, YUGOSLAVIA

(From Our Regular Correspondent)

Jan 6, 1933

#### Free Choice of Physicians Under Sickness Insurance

The laws regarding health insurance societies were not promulgated at the same time throughout the whole country. The parts of Yugoslavia that formerly belonged to Austria-Hungary were under such laws in 1888 and 1892, while the kingdoms of Serbia and Montenegro—now forming part of Yugoslavia—adopted them first in 1922. Germany, the pioneer in social insurance, had a system whereby physicians worked for such institutions at a fixed rate of pay. Austria-Hungary adopted the same system about 1890, and the laws regarding this were put into force throughout the whole country by the law enacted in 1922. Now the Yugoslavic Medical Association demands that the new law, which will be discussed this year in parliament, shall provide for a free choice of physicians in the health insurance societies. The directors of these societies want absolutely to retain the same system of fixed rate of pay for physicians that is now in force. On account of these opposing views a conflict has started, and that is why the new law has not yet been brought before parliament. As the number of insured persons will soon be much greater the Yugoslavic Medical Association wants a change in the law in order to insure better conditions for physicians working in the health insurance societies. Herewith are presented briefly the arguments on both sides.

In 1932 the average number of insured persons was about 609,190, and the number of physicians engaged 1,382. These



served on two different scales for general practice 1,068, specialists 166, physician-dentists 112, and technician-dentists (without M D degree) 36. Of 1,382 medical men, 1,156 have made a contract with the directors, and only 226 were employed as full time officers having the same rights as state officers (pension after thirty-five years of service). Thus each physician had about 440 members to take care of, or, if the dentists are included, this figure is raised to 479, so that for a medical visit the physician received about 4 dinars, or 6 $\frac{2}{3}$  cents.

The directors claim, in view of the financial situation, that it is impossible to pay more, and that the proposed system of free choice of physicians would require twice as much money to be paid to them. Even with the present system with a fixed rate of pay to physicians, difficulty is experienced in paying them. If the German system of free choice of physicians should be adopted, each one would have to treat 613 insured members, instead of 479, as is the case in Yugoslavia. In Germany each insured member pays yearly 1,441 dinars to the health insurance societies, while in Yugoslavia he pays only 488 dinars, and that is why our insurance budget is unable to allot more for medical treatment than is done at present.

In 1929, for 620,000 insured members, the health insurance societies of Yugoslavia paid out about 30,000,000 dinars to the physicians on a fixed rate of pay, i. e., about 47 dinars for each member. In Vienna, Austria, the physicians were paid 80 dinars for each member, and in Germany 243 dinars. The Yugoslavic Medical Association claims that 47 dinars is too modest a scale of remuneration for the work entailed.

The directors fear that the amounts granted for sickness and unemployment will become enormously increased with the system of free choice of physicians. The directors would be unable to control the physician's work effectively and in that way other expenses would rise, and the physician's earnings would be twice as high.

There are 4,000 physicians in Yugoslavia, 1,400, or about 35 per cent, are employed in the health insurance societies, in which only 71 per cent of the general population are insured. As the number of insured persons will increase soon under the new laws of social insurance, the Yugoslavic Medical Association is making every effort to make the position of physicians better than it now is. A greater number of physicians will soon be thus employed. The medical association claims that the expenditure for general administration at the health insurance societies is too high, that the budget allocated for new buildings and other investments is disproportionate, and, finally, that the physicians, being very modestly remunerated by the fixed rate of pay, must be freely chosen by the patients. To come to an understanding between two such divergent views is proving almost impossible, and it is not yet known whether the new law will permit the free choice of physicians.

#### Ten Year Campaign Against Tuberculosis in Yugoslavia

An extensive study was published recently by Dr. Vasa Savich on the work accomplished from 1920 to 1930 in combating tuberculosis. The population of Yugoslavia increased from 12,149,000 in 1920 to 13,879,000 in 1930. The methods and scope of the campaign against tuberculosis have developed greatly during this period and have obtained a most satisfactory measure of success, in view of all the conditions existing in the country. This campaign was led by the Red Cross, anti-tuberculosis leagues, health insurance societies, the central bureau of social welfare, the army and navy departments, state railroads, mutual insurance societies, and finally the ministry of public health. The work of the ministry was the most important, serving as the pivot for all anti-tuberculosis work. Special laws were promulgated for the training of physicians as specialists in tuberculosis, also of school physicians, and other personnel, for the methods to be followed in the physical education

of the nation, for the protection of children, and a special law for tuberculous school children and teachers, to remove them from the schools. The School of Hygiene in Zagreb and ten hygienic institutes organized annually special courses on tuberculosis for physicians and for public lecturers. One of the most important problems was the creation of special hospitals and sanatoriums for the tuberculous.

Whereas in 1918 there were only 87 beds in the whole country for the treatment and isolation of tuberculous patients, this number was increased by 1930 to 5,135, comprising 3,356 beds in sanatoriums and 1,779 in hospitals.

From 1918 to 1930, at all the prophylactic institutions, 1,238,942 initial medical examinations were made and 1,625,175 subsequent examinations, i. e., a total of 2,864,117 medical examinations for tuberculosis, 413,687 cases of tuberculosis were diagnosed, and 177,555 home visits were made. In all, 104,281 tuberculous persons were admitted to sanatoriums or hospitals, and 15,502 were isolated and treated in their homes.

The mortality from tuberculosis has certainly decreased. While the general mortality rate for 1930 as compared with 1918 has decreased, the rate from tuberculosis has decreased in the same period from 49.87 per cent to 32.35 per cent. But if 1920 is taken as a normal year, after the World War and the epidemic of influenza of 1918, the comparison will be more exact. From 1920 to 1930 the general mortality rate decreased 20.87 per cent, and the tuberculosis mortality decreased 15.16 per cent.

By this method of computing, in the last twelve years 125,811 lives have been saved by the anti-tuberculosis campaign. But if it had been possible to enforce all the general and special methods as they are in the United States, 272,000 more lives would have been saved. From that standpoint the sanitary deficit in Yugoslavia is enormous. For this reason it is imperative that we in this country reorganize our campaign and all other means of fighting the disease. The campaign now must be accommodated to our special conditions. Three main principles, however, must always be respected: 1. Koch's bacillus must be destroyed and its dissemination prevented outside the infective home. 2. Poor social conditions must be improved. 3. The biologic forces of the people must be developed and supported and their powers of resistance must be raised to the maximum.

The mortality rate from tuberculosis in Yugoslavia in comparison with some other countries is as follows. The mortality rate from tuberculosis per 10,000 was in 1928 in Denmark, 7.4, in the United States, 7.92, in England and Wales, 9.28, in Sweden, 12.6, in Norway, 15.6, and in Yugoslavia (in 1930), 22.94. Our mortality rate from tuberculosis was two and a half times as great as that of England, and nearly three times as great as that of the United States. These figures would indicate that we need about 40,000 beds for tuberculosis cases, instead of the 5,135 which we have at present. This is an urgent need, and every effort is being made to augment the present number of beds as much as possible.

## Marriages

WILLIAM PRENTICE KNOX, Decatur, Tenn. to Miss Alma Dyche of Corbin, Ky., at Madisonville, Ky., Dec. 22, 1932.

FRANK NAEGELI, Fergus Falls, Minn., to Mrs. Martha Nordby of Argusville, N. D., January 1.

RALPH H. SEGREST to Miss Sarah Lee Green, both of Bonifay, Fla., in Milton, Dec. 28, 1932.

BERNARD VINCENT McCABE to Miss Lucy Flinn, both of Helena, Mont., recently.

HARRY J. FORTIN to Mrs. Adele Hayden, both of Fargo, N. D., recently.

## Deaths

**Malcolm Ozro Grace**, Ozark, Ala., Vanderbilt University School of Medicine, Nashville, Tenn., 1909, member of the Medical Association of the State of Alabama, at one time secretary of the Dale County Medical Society, formerly member of the state board of health, and health officer of Ozark and of Dale County, aged 48, medical director and owner of the Grace Hospital, where he died, January 2, following an operation for appendicitis.

**Ansel Granville Cook** ♂ Hartford, Conn., College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1887, served during the World War fellow of the American College of Surgeons, consulting surgeon to the Hartford and Hartford Municipal hospitals, Hartford, Litchfield County Hospital, Winsted, and the Middlesex Hospital, Middletown, aged 70, died, January 25, of heart disease.

**John William Cahill** ♂ Worcester, Mass., Harvard University Medical School, Boston, 1907, member of the American Academy of Ophthalmology and Oto-Laryngology, the New England Ophthalmological Society and the New England Otolological and Laryngological Society, aged 50, on the staff of St. Vincent Hospital, where he died, January 15, of lobar pneumonia and arteriosclerosis.

**Merle William King** ♂ Cleveland, Johns Hopkins University School of Medicine, Baltimore, 1917, fellow of the American College of Surgeons, on the staffs of St. Luke's Hospital and the Charity Hospital, aged 47, was instantly killed, January 9, when the automobile in which he was driving plunged over an embankment into the Chagrin River.

**Louis Edward Broughton** ♂ Andalusia, Ala., Medical Department of the Tulane University of Louisiana, New Orleans, 1893, past president of the Medical Association of the State of Alabama, fellow of the American College of Surgeons, on the staff of the Andalusia City Hospital, aged 63, died, January 27, of acute nephritis.

**Percy De Mille McLeod** ♂ Tonopah, Nev., Harvard University Medical School, Boston, 1894, secretary and past president of the McLeod County Medical Society, county health officer, aged 63, died, January 8, of burns received when the automobile in which he was driving overturned and caught fire.

**Louis E. Goldblatt**, Brooklyn, Middlesex College of Medicine and Surgery, Cambridge, Mass., 1930, resident physician to the Evangelical Deaconess Hospital, aged 32, died, January 5, following laceration of the esophagus accidentally incurred by some foreign body in the food.

**Theodore N. Kittelson** ♂ Fergus Falls, Minn., University of Minnesota College of Medicine and Surgery, Minneapolis, 1902, member of the American Academy of Ophthalmology and Oto-Laryngology, aged 57, on the staff of St. Luke's Hospital, where he died, January 10, of pneumonia.

**Theron James Vosburgh**, White Plains, N. Y., University and Bellevue Hospital Medical College, New York, 1908, member of the Medical Society of the State of New York and the American Psychiatric Association, aged 49, died, Dec. 4, 1932, of arteriosclerosis and nephritis.

**Frank Lipscomb Watson** ♂ McAlester, Okla., University Medical College of Kansas City, Mo., 1899, secretary and past president of the Pittsburgh County Medical Society, aged 60, on the staff of the Albert Pike Hospital, where he died, Dec. 21, 1932, of pneumonia.

**James Horace Lenow**, Little Rock, Ark., Jefferson Medical College of Philadelphia, 1872, member and past president of the Arkansas Medical Society, emeritus professor of urology and formerly dean, University of Arkansas School of Medicine, aged 82, died, Dec. 30, 1932.

**Maurice Martin Critchlow**, Salt Lake City, Utah, Rush Medical College, Chicago, 1917, fellow of the American College of Surgeons, member and formerly secretary of the Utah State Medical Association, aged 41, died, January 18, of a narcotic self-administered.

**Gassaway Oram Ring** ♂ Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1885, member of the American Ophthalmological Society, formerly on the staff of the Episcopal Hospital, aged 71, died, January 17, of cerebral hemorrhage.

**Thomas Andreas De Marco**, Springfield, Mass., Royal University of Naples, Faculty of Medicine and Surgery, Naples, Italy, 1900, member of the Massachusetts Medical Society, aged 55, died, January 3, in the Wesson Memorial Hospital, of cerebral hemorrhage.

**James Urey Ridley**, Henderson, Ky., Hospital College of Medicine, Louisville, 1907, member of the Kentucky State Medical Association, served during the World War, on the staff of the Henderson Hospital, aged 50, died, January 17, of cerebral hemorrhage.

**Lazare Weiss**, Newark, N. J., Universitatea din Bucuresti Facultatea de Medicina, Roumania, 1899, member of the Medical Society of New Jersey, aged 70, died, January 7, at the Aurora Health Farm, Morristown, of myocarditis and coronary thrombosis.

**James Le Roy Cooper**, Fort Worth, Texas, College of Physicians and Surgeons, Baltimore, 1883, member of the State Medical Association of Texas, aged 72, died, January 13, in the Harris Hospital, of peritonitis following a cholecystectomy.

**Gustavus Albert Warren** ♂ Black Rock, Ark., Missouri Medical College, St. Louis, 1894, past president of the Arkansas Medical Society and the Lawrence County Medical Society, aged 66, died, Dec. 26, 1932, of heart disease, following septicemia.

**Albert Walter Durand**, Newark, N. J., College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1886, member of the Medical Society of the State of New York, aged 68, died, January 15, of chronic myocarditis.

**Raymond Clare Coleman**, Estherville, Iowa, State University of Iowa College of Medicine, Iowa City, 1912, medical director and owner of a hospital bearing his name, aged 43, was found dead, January 7, of a self-inflicted bullet wound.

**George McCrea Robson**, Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1924, instructor in pathology at his alma mater, on the staff of the Misericordia Hospital, aged 33, died, January 16, of heart disease.

**John Hughes Scott**, Shawnee, Okla., Kentucky School of Medicine, Louisville, 1894, member and past president of the Oklahoma State Medical Association and the Pottawatomie County Medical Society, aged 68, died, Oct. 11, 1932.

**John Lawrence Sheetz** ♂ New Oxford, Pa., University of Pennsylvania School of Medicine, Philadelphia, 1879, aged 76, died, January 7, in the Annie M. Warner Hospital, Gettysburg, of hypertrophy of the prostate and uremia.

**William Francis Donahue**, Watertown, Mass., Harvard University Medical School, Boston, 1896, member of the Massachusetts Medical Society, aged 64, died, Dec. 28, 1932, of Parkinson's disease and bronchopneumonia.

**Louis Henry Clarke** ♂ Holyoke, Mass., College of Physicians and Surgeons, Medical Department of Columbia College, 1885, part owner of the Holyoke Surgical Hospital, aged 69, died, January 15, of coronary endocarditis.

**George Mitchell Belhumeur**, Iron Mountain, Mich., University of Michigan Medical School, Ann Arbor, 1908, member of the Michigan State Medical Society, aged 49, was found dead, January 9, of heart disease.

**Ross Underwood Whiteside** ♂ Surg., Lieutenant Commander U. S. Navy, Brooklyn, Emory University School of Medicine, Atlanta, 1918, entered the Navy in 1921, aged 41, died, Dec. 16, 1932, at Olathee, Ala.

**John Mitchell Washburn**, Kewanna, Ind., Medical College of Indiana, Indianapolis, 1895, member of the Indiana State Medical Association, aged 65, died, Dec. 25, 1932, of chronic nephritis and myocarditis.

**Joseph J. Woodard**, Olathe, Kan., University Medical College of Kansas City, Mo., 1899, member of the Kansas Medical Society, formerly county coroner, aged 74, died, Dec. 28, 1932, of cerebral hemorrhage.

**Frederick Tremaine Billings** ♂ Pittsburgh, Yale University School of Medicine, New Haven, 1898, fellow of the American College of Physicians, aged 59, died, January 5, of subacute bacterial endocarditis.

**M. Arista Bingley**, Chicago, College of Physicians and Surgeons, Chicago, 1898, member of the Illinois State Medical Society, aged 79, was killed, Dec. 24, 1932, when he was struck by an automobile.

**Halsey Lathrop Wood**, New York, College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, 1875, aged 83, died, January 12, of chronic endocarditis.

**Bruce Gould Blackmar** ♂ Brooklyn, College of Physicians and Surgeons in the City of New York, Medical Department of Columbia University, 1892, aged 64, died, January 13, of heart disease.

**John G Wakefield**, Wilkesburg, Pa., University of Pittsburgh School of Medicine, 1910, member of the Medical Society of the State of Pennsylvania, aged 52, died, Dec. 27, 1932, of pneumonia.

**Addison Clyde Grimes**, Clayton, N. M., Vanderbilt University School of Medicine, Nashville, Tenn., 1927, member of the New Mexico Medical Society, aged 32, died, Dec. 26, 1932, of pneumonia.

**John Edwin Quidor** ⊕ Vicksburg, Miss., University of Arkansas School of Medicine, Little Rock, 1905, aged 53, died in January, of cirrhosis of the liver and esophageal varices with hemorrhage.

**Albert Peacock**, Chicago, University of Buffalo School of Medicine, 1891, member of the Illinois State Medical Society, aged 70, died, January 11, of myocarditis, influenza and pneumonia.

**Adelard Riverin**, Chicoutimi, Que., Canada, School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1893, aged 64, died, Nov. 16, 1932.

**Lorenzo D. A. Winn**, Poynette, Wis., College of Physicians and Surgeons, Keokuk, Iowa, 1887, aged 77, died, Dec. 23, 1932, in a hospital at Madison, of hypostatic pneumonia and nephritis.

**Ransom E. Moss**, Pontiac, Mich., University of Buffalo School of Medicine, 1880, member of the Michigan State Medical Society, aged 78, died in December, 1932, of heart disease.

**Francis Frederick Knorp** ⊕ San Francisco, Cooper Medical College, San Francisco, 1892, on the staff of St. Mary's Hospital, aged 60, died, January 20, of heart disease.

**Henry Ambrose D. Schollenberger**, Smithville, Ohio, National Normal University College of Medicine, Lebanon, 1892, aged 70, died, January 15, of carcinoma of the liver.

**Charles Edward Thomas**, Anniston, Ala., Long Island College Hospital, Brooklyn, 1890, aged about 62, died, January 4, of stab wounds in the chest, inflicted by someone unknown.

**John Edward Matheson**, Vancouver, B. C., Canada, University of Toronto Faculty of Medicine, 1927, on the staff of the Vancouver General Hospital, aged 30, died, Nov. 9, 1932.

**Thomas Daniel Casey**, Ashland, Pa., Jefferson Medical College of Philadelphia, 1893, member of the Medical Society of the State of Pennsylvania, aged 60, died, Nov. 24, 1932.

**Green M. Coston**, Ireland, Texas, University of Tennessee Medical Department, Nashville, 1889, member of the State Medical Association of Texas, aged 73, died, in January.

**Watson G. Scurlock**, Jackson, Ohio, Starling Medical College, Columbus, 1900, member of the Ohio State Medical Association, aged 57, died, January 5, of angina pectoris.

**William A. Schwallie**, Honolulu, Hawaii, Medical College of Ohio, Cincinnati, 1889, member of the Hawaii Territorial Medical Association, aged 66, died, Nov. 17, 1932.

**Marshall Baker**, Webster Groves, Mo., St. Louis Medical College, 1879, member of the Missouri State Medical Association, aged 87, died, January 6, of chronic myocarditis.

**Edward M. Culp**, Clifton, Tenn., Vanderbilt University School of Medicine, Nashville, 1913, aged 46, died, January 3, in St. Thomas' Hospital, Nashville, of pneumonia.

**Grover Athey Beckett**, Covington, Ky., Kentucky School of Medicine, Louisville, 1907, served during the World War, aged 48, died, January 17, of acute nephritis.

**William H. Englesby** ⊕ Burlington, Vt., University of Vermont College of Medicine, Burlington, 1897, aged 60, died, Dec. 22, 1932, of cerebral hemorrhage.

**Millard F. Wedding**, Rome, Ind., University of Louisville (Ky.) School of Medicine, 1885, aged 76, was found dead in bed, Dec. 5, 1932, of heart disease.

**Edwin H. Mendenhall**, Richmond, Ind., Indiana Medical College School of Medicine of Purdue University, Indianapolis, 1906, aged 63, died, Nov. 29, 1932.

**William Duff Murray**, Vancouver, B. C., Canada, Dalhousie University Faculty of Medicine, Halifax, N. S., 1906, aged 52, died suddenly, Sept. 20, 1932.

**Nathaniel Sheppard Bush**, Cincinnati, Miami Medical College, Cincinnati, 1883, aged 77, died, January 21, in Newport, Ky., of lobar pneumonia.

**Webster Bliss**, Ann Arbor, Mich., Bennett College of Eclectic Medicine and Surgery, Chicago, 1878, aged 90, died, January 14, of arteriosclerosis.

**Daniel Kriedt** ⊕ Minneapolis, Medical Department of Hamline University, Minneapolis, 1900, aged 55, died, Dec. 29, 1932, of coronary sclerosis.

**John H. Walton**, Como, Miss., University of Louisville (Ky.) School of Medicine, 1882, aged 79, died, Nov. 30, 1932, of cerebral hemorrhage.

**Smithpeter N. Smith**, San Luis, Colo., University of Louisville (Ky.) School of Medicine, 1894, aged 66, died, Dec. 19, 1932, of pneumonia.

**Mercena Sherman Ricker**, Rochester, N. Y., Homeopathic Hospital College, Cleveland, 1888, aged 81, died, January 17, of lobar pneumonia.

**Richard Rowan**, Stouffville, Ont., Canada, Victoria University Medical Department, Coburg, 1890, also a druggist, aged 78, died, Oct. 22, 1932.

**Mary E. Richards**, Brooklyn, New York, Medical College and Hospital for Women, 1895, aged 80, died, Nov. 26, 1932, of carcinoma of the rectum.

**John Jacob Mory**, St. Henry, Ohio, Jefferson Medical College of Philadelphia, 1869, aged 86, died, Dec. 28, 1932, of intestinal obstruction.

**Marvin S. Rice**, Aurora, Ill., Hahnemann Medical College and Hospital, Chicago, 1876, aged 81, died, January 17, of coronary thrombosis.

**Jasper LeRoy Atherton** ⊕ Springfield, Mo., Bennett Medical College, Chicago, 1912, aged 53, died, Dec. 4, 1932, of coronary thrombosis.

**Prince Tannatt Woods**, Kingston, Mass., Boston University School of Medicine, 1895, aged 62, died, Oct. 10, 1932, of coronary sclerosis.

**Charles V. Emmanuel Marsil**, St. Eustache, Que., Canada, Laval University Medical Faculty, Montreal, 1887, aged 67, died, Sept. 18, 1932.

**Needham P. Boddie** ⊕ Durham, N. C., College of Physicians and Surgeons, Baltimore, 1883, aged 73, died, January 26, of heart disease.

**John W. Motley**, Bethel Springs, Tenn. (licensed, Tennessee, 1891), aged 77, died, Dec. 14, 1932, of carcinoma of the cervical glands.

**Benoni F. Underwood**, Edgewater, N. J., Homeopathic Medical College of Pennsylvania, Philadelphia, 1868, aged 89, died, Nov. 21, 1932.

**Wilfred Northup Cochran**, Mahone Bay, N. S., Canada, Halifax Medical College, 1901, served during the World War, died Nov. 5, 1932.

**James Gordon Baird**, Riverside, Calif., McGill University Faculty of Medicine, Montreal, Que., Canada, 1870, aged 86, died, Dec. 2, 1932.

**Herring Winship** ⊕ Macon, Ga., Jefferson Medical College of Philadelphia, 1903, aged 57, died, Dec. 30, 1932, of agranulocytosis.

**Thomas Andrew Long**, Portland, Ore., American Medical College, St. Louis, 1883, aged 76, died, Dec. 19, 1932, of arteriosclerosis.

**John Franklin Ross**, Kirkfield, Ont., Canada, Victoria University Medical Department, Coburg, 1892, aged 72, died, Nov. 25, 1932.

**Bernhard Erp Brockhausen**, Freeport, Ill., Humboldt Medical College, St. Louis, 1869, aged 87, died, January 13, of pyuria.

**Alfred Drouin**, Bagotville, Que., Canada, Laval University Faculty of Medicine, Quebec, 1901, aged 60, died, Nov. 22, 1932.

**Charles Elsworth Teter**, Alameda, Calif., Central Medical College of St. Joseph, Mo., 1899, aged 62, died, Nov. 22, 1932.

**Henry Volle**, Reading, Ohio, Eclectic Medical Institute, Cincinnati, 1891, aged 79, died, Dec. 9, 1932, of pneumonia.

**Arnold Grant Webb**, Cincinnati, Medical College of Ohio, Cincinnati, 1900, aged 57, died, Dec. 23, 1932, of heart disease.

**Thomas D. Palmer**, Chicago, Chicago Medical College, 1867, aged 84, died, January 17, of carcinoma of the prostate.

**Charles E. Kerney** ⊕ Dayton, Ohio, University of Michigan Medical School, Ann Arbor, 1891, aged 66, died, January 3.

**John A. Plumer** ⊕ Trivoli, Ill., College of Physicians and Surgeons, Keokuk, Iowa, 1889, aged 64, died, Nov. 27, 1932.

**John Francis Shea**, Boston, New York University Medical College, New York, 1898, aged 57, died, Nov. 25, 1932.

**Harry C. Hubbard**, Parma, Mich., Fort Wayne (Ind.) College of Medicine, 1892, aged 66, died, Dec. 18, 1932.

# BUREAU OF INVESTIGATION

## Bureau of Investigation

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### DeWAN'S DEPILATORY Another Sulphide Hair Remover Sold Under False and Misleading Claims

For some time past there has been an aggressive advertising campaign for a product called 'DeWan's Permanent Hair Remover.' A number of inquiries have been received by the Bureau of Investigation from physicians, laymen, department stores, Butter Business Bureaus, etc., asking for information on the product. A Chicago physician wrote:

One of my patients has asked me about DeWan's Permanent Hair Remover. Has it been investigated by your department? If so I would appreciate a copy of your report.

A layman in California wrote:

Please send me available information on DeWan's Permanent Hair Remover.

A physician, medical director of a department store in Cleveland, Ohio, writes:

Please let me have any information you may have concerning DeWan's Depilatory. I have been asked to advise a department in our organization with regard to the value of this preparation and what type of advertising they should use in connection with it.

A large department store in San Francisco wrote:

We have been offered a product known as DeWan's Permanent Hair Remover made by the DeWan Laboratories, Inc. Chicago. This product carries many testimonials and guarantees that on the face of them look convincing but we are not in a position to accept these or any similar statements unless backed up by authority such as is embodied in your institution.

DeWan's Laboratories, Inc., was incorporated under Illinois laws in the spring of 1932, but apparently did not become active until September, 1932. It had for its officers Francis DeWan, president and treasurer, Mrs. Francis (Evelyn L.) DeWan, secretary, and William H. Leckie, vice-president, all of Chicago. Francis DeWan has been described as a chemist, although his name seems to be unknown to the chemical profession, and does not appear in the directory of the Chicago section of the American Chemical Society. In the latter part of December, 1932, the assets and good will of the DeWan Laboratories are said to have been purchased by J. L. Younghusband, president of American Advertised Products, Inc.

When the DeWan preparation first came out, the company exploiting it was called the Saint Aubin Corporation at 43 East Ohio Street Chicago. Later this became the DeWan Laboratories Inc., at the same address. Still later this became the DeWan Laboratories at 11 East Austin Avenue Chicago, while the latest name is DeWan-Hollywood Laboratories, Inc., Hollywood, Calif.

Before the DeWan product changed hands and was taken over by the present owners, the following claim, among others, was made:

Each of the fifteen separate ingredients contained in Permanent was thoroughly tested individually and in compound with the others and a product perfected which can be used without harmful or injurious results on the face, limbs and body as is attested by endorsement of Rush Medical College of Chicago.

When this claim was brought to the attention of Rush Medical College, Dr. Ernest E. Irons, the dean wrote under date of Dec. 30, 1932, to the DeWan Laboratories Inc., asking who made the report and on what statements the Rush Medical College alleged endorsement was made. At the time Dr. Irons developed the fact that there was not the slightest basis for my such claim that no one connected with Rush Medical College had authorized any endorsement of the DeWan product. After two weeks delay Dr. Irons received a letter from the attorneys for the new owners of DeWan product stating that when negotiations were being carried on with respect to the purchase of the DeWan concern, statement was made that the preparation had been endorsed

by Rush Medical College, but when proof of such statement was requested, none was forthcoming. The attorneys apologized for the misstatement, although explaining that neither they nor their clients were responsible for it and that the statement had not been made by the new owners.

The DeWan depilatory has been heavily advertised under the names of various department stores. These large and expensive advertisements are said to have been paid for, not by the department stores whose names give an air of respectability to the business, but by the DeWan concern itself. As cosmetics do not come within the scope of the National Food and Drugs Act, the manufacturers of such products can—and frequently do—make false and misleading statements on and in the trade package in a way that would lay a 'patent medicine' concern open to prosecution.

The story told in the circular sent with the trade packages of the earlier specimens was to the effect that a 'French chemist' had, through his skill and perseverance, been able to devise a depilatory that had no offensive odor and would harmlessly and permanently remove hair. There was the usual hokum regarding the 'insurmountable difficulties' that confronted the chemist in his quest, and the necessary mystery element was injected by the claim that 'the far corners of the world were called upon for some of the more than fifteen harmless ingredients' that allegedly, went into the depilatory.



Greatly reduced facsimiles of some large display advertisements used in the present DeWan campaign.

In some of the later advertising the following claims appear:

No harsh or poisonous chemicals are used so there is no obnoxious odor—it will not irritate the most sensitive skin.

Depends for its permanent action upon a scientific blend of rare oils.

DeWan's is positively non irritating and should any redness or irritation be noticed after a treatment it is due to an acid or similar condition of the body or an unhealthy condition of the skin.

The fact is the DeWan preparation is just one more of the innumerable alkaline sulphides with which the depilatory field is flooded. Alkaline sulphides have the power of dissolving hornlike substances such as hair and obviously anything that is powerful enough to remove the hair may easily be powerful enough to remove the skin. There is not a scintilla of scientific evidence to show that the continued application of alkaline sulphides will permanently remove hair. The claim that the DeWan product is a 'permanent' hair remover is false, and is equally without justification.

Much stress is laid on the claim that the DeWan Preparation is fragrant. It is a fact that it has been loaded down with perfume in an effort to disguise the smell of hydrogen sulphide that is inseparable from all alkaline sulphide depilatories. The DeWan preparation comes in powder form which in use, has to be mixed with water and made into a paste. Before the water is added the heavy perfume fairly successfully smothers the hydrogen sulphide smell as soon as water is mixed with it, however, the rotten egg odor becomes quite obvious.

The A M A Chemical Laboratory was asked to examine the DeWan preparation. They reported as follows

## LABORATORY REPORT

"An original specimen of DeWan's Permanent Hair Remover (DeWan Laboratories, Inc., 43 East Ohio Street, Chicago), purchased on the open market (Price \$2.00) was submitted by the Bureau of Investigation to the A M A Chemical Laboratory for examination. The jar contained 43.1 Gm (approximately 1.4 ounces) of a white powder, possessing a strong aromatic odor (perfume) and also an odor resembling hydrogen sulphide. Qualitative tests indicated the presence of sulphides, sulphate, chlorides (trace), starch, zinc, strontium, calcium and sodium (trace). Barium, magnesium, potassium and thallium were not found."

"The report of a petrographic examination indicated the presence of zinc oxide, strontium sulphide, and a relatively large amount of orris root (starch)."

More recent specimens appear to have had the inactive ingredients changed, but strontium sulphide still remains the active depilating agent. The newspaper advertisements and the advertising that accompanies the trade package speak of "rare oils and secret ingredients which do not kill the root but sterilize it so it cannot reproduce." It is a sorry commentary on the public's intelligence that this sort of buncombe can appear in the public prints and that supposedly reputable newspapers and department stores will, for the money there is in it, give publicity to such nonsense.

The advertising circular, while stating that the DeWan preparation is "positively non-irritating," in the same sentence states that if it causes irritation, this result is due, not to the depilatory, but to an "acid condition" of the body! Especially vicious was the suggestion made in some of the circulars accompanying the trade package that this sulphide mixture be used to remove hair from the eyelids. Less than two months ago a physician reported an accident with another sulphide depilatory, which comes in paste form, that a woman patient accidentally got into one of her eyes. The sight was destroyed. It has also been recommended that the DeWan preparation be used to remove hair from the inside of the nostrils and inside the ears.

It would appear from the expensive advertising campaign and the exorbitant price (\$2.00 for less than 1½ ounces) that is charged for the DeWan product that the exploiters will make a quick clean-up. The recommendations are that the patient (or victim) apply the DeWan product every fourth day for a period of thirty weeks. The exploiters "absolutely guarantee" that if it is used thus, the hair will be permanently removed. But should it fail, the DeWan concern does not offer to return the purchase money, but merely to supply without charge additional material! Of what value is such a guarantee? If the purchasers could get a "money back" guarantee from the respectable department stores that sell this "permanent" hair remover or from the equally respectable newspapers that share the profits in the exploitation of DeWan's, it might mean something. But a guarantee that merely promises that when a product proves worthless more of the product will be furnished free, means little.

**Pasteur's Mistakes**—Pasteur was not a physician and could not be expected to have a correct knowledge of pathology and of the symptoms of diseases. But his medical colleagues should have protected him against the errors into which he had fallen. To try the saliva of rabid animals for immunization and the nasal secretion of horses for vaccination of rabbits against a horse-typhoid condition was nonsense. Saliva and nasal mucus contained many different organisms and what Pasteur claimed as a new disease in rabbits from a "figure of eight" microbe found in saliva was nothing more than rabbit septicemia, a disease long known and the organism well recognized. Pasteur had not procured his "vaccines" from the tissues specifically attacked in these diseases. Such rubbish should not have been brought to an international congress. Pasteur had not published fully his exact methods in attenuating the organisms of chicken cholera or of weakening the anthrax organism for the preparation of "vaccines." This was not scientific, as others could not check his results.—Webb, G B. Robert Koch, *Ann M Hist* 4 514 (Nov) 1932.

## Correspondence

## ACUTE IODISM AFTER INSTILLATION OF IODIZED OIL

*To the Editor*—In view of the report by J O Firth relative to acute iodism following a faulty iodized oil instillation (tracheal) in *THE JOURNAL*, January 14, it is interesting to note a case of an exactly similar nature that occurred in a young woman in the medical service of Dr Abraham I Rubenstone.

At 10 a m, January 13, Miss K, aged 22, in a good state of health, was prepared for a diagnostic study of the bronchi with iodized oil. The pharynx and hypopharynx were cocainized by topical application of 20 per cent cocaine hydrochloride solution. Twenty cubic centimeters of fresh, warm iodized poppy-seed oil 40 per cent was slowly injected at the base of the tongue and the patient requested to breathe deeply. The procedure seemed to be progressing in the accustomed manner, with the exception that the patient was distinctly observed to swallow three times during the course of the instillation. The roentgenogram showed a very poor endobronchial, iodized oil picture and demonstrated a quantity of iodized oil in the stomach.

At 4 p m, six hours following the injection of iodized oil, the patient complained that she had apparently "caught a cold," as there was an excess of nasal secretion and marked lacrimation.

At 9 o'clock, the eyelids were edematous, she was suffering with periodic attacks of sneezing, and her voice had become hoarse.

At 1 a m the patient began to complain of sharp, bilateral pain over the parotid glands. In the morning she had all the signs of an acute infection of the upper respiratory tract with salivary gland involvement, except that she was entirely afebrile. It was at this time that a diagnosis of iodism was entertained. Later, Firth's case report was noted, and the striking similarity between these two cases was readily apparent.

The patient continued afebrile with a gradual subsidence, over a period of five days, of the symptomatology. The treatment consisted of the free exhibition of fluids and a saline purge.

S LEON ISRAEL, M D, Philadelphia

Chief Resident Physician,  
Mount Sinai Hospital

## TUBERCLE BACILLI IN THE STOMACH CONTENT

*To the Editor*—The importance of the demonstration of tubercle bacilli in the stomach contents of children was pointed out by some students of the Sea View Hospital and the City of New York Department of Health in *THE JOURNAL*, May 28, 1932, page 1879. To search for tubercle bacilli in the sediment of the stomach is an easy and accurate way of detecting, in the absence of any expectoration, the presence of active tuberculous processes in children and even in adults. In fact, it has been used as a routine examination since 1930 in our service at Bordeaux, France, and nearly 300 patients have had the benefit of the procedure. In only a few cases the inoculation of guinea-pigs has been considered necessary, trustworthy results being obtained through our technic by direct microscopic examination. Therefore the method is being used on a more and more extensive scale and is considered a valuable improvement in the control of tuberculosis.

Though our technic was first derived from Armand-Delille, practice has led us to such changes that it must be described again. The lavage is carried out in the morning on an empty stomach after the first matutinal cough. During the night indeed, bronchial mucosities have been swallowed unconsciously.



and have not yet passed into the intestine, moreover, the first fits of coughing have cleaned the bronchi, in which material rich in bacilli is stagnating. An Einhorn catheter is used, its small diameter enabling the patient to swallow it without difficulty. Even the most nervous and timid patients, the greatest number of whom have been children from 4 to 13 years of age, do it easily. We ask the child sitting before us to open his mouth wide, and we promptly introduce into his pharynx with our finger the extremity of the catheter, asking him to swallow it like candy and to abstain from coughing. This is the only difficulty, and it is always overcome. Deglutition then progresses easily and the reaching of the stomach is indicated by a little line drawn on the catheter (a line for children, another for adults). Then we introduce from 50 to 60 cc of physiologic solution of sodium chloride with the help of a 20 cc syringe fitted to the other end of the Einhorn tube. We seldom are obliged to use more solution and we never perform a complete stomach lavage. This point of the method is particularly to be insisted on, it explains the innocuousness and the perfect simplicity of the method, which enables us to repeat it as many times as necessary on the same patient. The physiologic solution of sodium chloride is immediately extracted by aspiration with the syringe. Sometimes during this operation the tube has been accidentally moved and the olive no longer reaches the bottom of the stomach. The aspiration then is negative. It is sufficient to obtain from the patient two or three deglutitive movements in order to see the liquid rise in the syringe. In this liquid, bronchial secretions are found with their usual shape or only as shapeless purulent particles. As far as possible we try to obtain characteristic bronchial secretion. Sometimes we have the good fortune to find a true purulent sputum.

The specimens are centrifugated first at low speed. The sediment is suspended in 30 cc of sterile water and treated by ten drops of sodium hydroxide. This is incubated for ten minutes at 30 C with the addition of 25 per cent alcohol to make the density equal 1.004. The specimen, when homogenized is centrifugated again for three quarters of an hour and the sediment is dropped on a slide without spreading. Smears are made by the usual Ziehl-Neelsen method for the detection of acid fast bacilli. Examination of the slides must be performed many times and most completely. Bacilli are often rare and found only after a patient search of two or three slides made with the sediment of each centrifugated tube.

Inoculation of guinea-pigs is performed only in the event of negative direct examination with positive results of the Pirquet test and of the physical and roentgenologic examination. Then further investigation is required in an attempt to determine accurately the presence of an actual tuberculous process.

The method applied in the beginning only to children, has now been extended to adults. In both cases it is used for the purpose of early diagnosis and is considered one of the most necessary and most useful procedures available for giving positive information in the incipient period of tuberculosis.

Children, unless suffering from an extensive ulcerative process, cannot spit before 7 or 8 years of age. The probability of a tuberculous infection detected by the Pirquet test, the clinical and roentgenologic symptoms and the social conditions, must be ascertained by a positive result. Positive feces examination can be obtained by a rather cumbersome technic and not directly connected with the pulmonary lesions. We have obtained the best results with the routine examination of the stomach contents. The children were brought to us at the Centre Antituberculeux of Bordeaux or were hospitalized at the Sanatorium N. Arnoz. They were of school age and belonged to both sexes. For the most part the suspicion was founded on (1) a tuberculous home environment (2) a positive Pirquet test and (3) a roentgenologic examination showing a hilus process with or without peribronchial enlargement. In every positive case hospitalization or emergency treatment was

ordered and the presence of an active tuberculous process was shown by further development. In negative cases, general supervision was considered sufficient and the suspicion was proved unjustified.

The routine practice of the exploration of the stomach contents in children has led us naturally to use it on adult patients from whom no sputum could be obtained, the diagnosis lacking the same definitiveness as for children. We discovered then that the method was of great diagnostic and prognostic usefulness.

The early diagnosis of tuberculous conditions being far more advanced now than some years ago, it frequently occurs that patients are sent to the sanatorium on suspicion aroused by a chronic state of depression or a roentgenologic examination. The difficulty then is to know whether tuberculosis is responsible for these conditions, and therefore what lines of treatment should be adopted. Expectoration not being obtainable in such cases, it has been systematically replaced by the exploration of the stomach content through the same technic as previously described. Patients with positive results are submitted to thorough supervision and kept under sanatorium care. Those with negative results are allowed to resume their former life after some months' stay, which is sufficient to improve their condition materially. Many cases, of course, remain questionable a positive impression being afforded by one or more methods of exploration, and a negative impression by others. But we consider it impossible to avoid questionable cases and we have never thought that we have found a final solution of the problem. We are content to possess a practical, convenient, simple method, which adds to our best means of reaching probability.

DR FERDINAND PIECHAUD,

DR RENÉ BACQUET,

Bordeaux, France.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

### PROOF OF ALCOHOLIC INTOXICATION

To the Editor—In these days of many automobile accidents, the doctor is often called on to pass on individuals to determine whether they are under the influence of intoxicating liquor sufficiently to contribute to the cause for accident, or whether they are sufficiently intoxicated so that they should not be driving. What are the minimum signs and symptoms and what is the minimum of adequate tests to determine these in order to render a decision unfavorable to the one who has been brought in as under suspicion of being too much under the influence of liquor to continue driving in order to prevent further accidental consequences? Please omit name.

M D, California

ANSWER—American courts differ in the amount of evidence required to prove alcoholic intoxication, some being satisfied with the fact that the accused has been drinking, while others require clear and convincing evidence of loss of mental and muscular control and coordination. English jurists have pointed out that a man may be under the influence of alcohol to an extent that makes him totally unfit to drive an automobile and yet fail to present the complete syndrome of drunkenness or enough evidence to convict him were he walking or sitting still. Miles showed that with delicate testing methods mental and muscular incoordination could be detected in subjects showing less than 0.3 mg of alcohol per cubic centimeter of blood such as resulted from the ingestion of only 27 Gm of alcohol, in concentrations as low as 2.75 per cent. Examining physicians, however, generally follow the more conservative interpretations of the law and hesitate to diagnose a man as suffering from acute alcoholic intoxication in the absence of signs of loss of control or speech or of locomotion in addition to the mental alterations and odor and other symptoms of alcoholic inhibition. Chemical determinations showing a concentration of 1 mg of alcohol or more per cubic centimeter of blood or urine, or for each 2 liters of expired air, greatly strengthen such diagnoses.

The examination of a suspect for alcoholic intoxication should include a medical interview, physical examination neu-



rologic tests and chemical analysis for the presence and amount of alcohol. The subject should be asked to give his name, age and occupation and to state whether he has been drinking and whether he is ill, and may be requested to repeat test phrases, such as "Methodist Episcopal." Attention should be given to his apparent orientation, to his comprehension, to the loudness and rapidity of speech and to his choice of words, as well as to the clearness and correctness of enunciation. General behavior, disposition and reactivity should be observed, and hiccuping, belching, vomiting or drooling noted. The odor of alcohol or of other liquors on the breath or person, or the presence of liquor in the clothing, is recorded. Flushing of the face, congestion of the conjunctiva, rapidity of the pulse, and inequality, dilatation or abnormal reactions of the pupils are observed. Muscular incoordination is elicited by the Romberg test (swaying when standing with eyes closed) walking along a straight line or touching the finger to the nose or other points with the eyes closed, or similar tests. Chemical examinations should be made of the breath, urine, blood or spinal fluid for the presence and amount of alcohol.

Further discussion with reference to the literature may be found in the sixth chapter of *Alcohol and Man*, edited by Haven Emerson, recently published, and in *Queries and Minor Notes*, *THE JOURNAL*, Jan 11, 1930, page 125, and Sept 12, 1931, page 798.

#### ANOMALIES OF CONJOINED TENDON

*To the Editor*—Recently I operated on a patient who had a congenital or developmental absence of the conjoined tendon and of the lower portion of the aponeurosis of the external oblique with a complete absence of the shelving edge of Poupart's ligament. Owing to the fact that this was an industrial case and on account of this missing structure it was difficult to repair the hernia, and since there was nothing to attach the arching fibers of the conjoined tendon, oblique and transversalis, a recurrence of the hernia is quite possible. Is this anomaly frequent?

J W SCHAUER, M D, Cleveland

*ANSWER*—Anatomists and surgeons recognize the constant variableness of development of the conjoined tendon as well as the muscles forming it. B B Gallaudet (*A Description of the Planes of Fascia of the Human Body*, Columbia University Press, 1931) believes that the ligament of Poupart, which includes the portion known as the ligament of Gimbernat, is a distinct entity and is not continuous with the planes of fascia uniting with it above, below, in front and behind.

The absence of the ligament of Poupart has not been reported in any available references, but it is probable that extreme undevelopment may occur.

The external oblique fascia and the iliac fascia laterally are continuous at the ligament of Poupart with the iliopectineal fascia and the fascia lata, consequently, the use of these fascias should aid the closure of the inguinal canal. The use of the transversalis fascia also is of value.

The internal oblique and transversalis muscles or their conjoined tendon may be sutured to Cooper's ligament along the iliopectineal line, as is done in femoral hernia, in the absence of a strong ligament of Poupart. The rectus fascia may be turned down to reinforce this region.

By the proper plastic use of the fascias in this region and by transplanting the cord outside the external oblique fascia after the Gerard method of repair of inguinal hernia, a recurrence should be avoided.

#### RADIUM PAINT ON CLOCK DIALS

*To the Editor*—If one sleeps on the near or farther side of a bed when a clock with radium paint on the hands and figures is about 6 inches from the near side of the bed and level with the top surface of the bed at its head, what effect will the radium in the paint have on the sleeper over a period of months or years? When one sleeps on the near side of the bed, the clock would be 1 or 2 feet from his head and when he sleeps on the farther side it would be 3 or 4 feet from his head. If the clock should be put on the floor under the side of the bed, would the radium have the same effects? Please omit name.

M D, New York

*ANSWER*—Present-day knowledge of radioactive substances appearing on clock and watch dials prompts the belief that harm will not be produced under any of the conditions indicated in this query. This does not imply that there is no discharge of radioactive substances into the room. It is probably true that microchemical and microphysical measurements would establish both radium gases and rays in the close vicinity of the clock dial. A sensitive photographic film would probably be influenced when placed in contact with the dial itself. No less the quantity of exposure is well within the tolerance of man, and no known harmful action would take place.

The latest discussion of this problem may be found in the *Journal of Industrial Hygiene* 13 117 (April) 1931, in an article by Schlundt, McGavock and Brown.

#### CONGENITAL SYPHILIS

*To the Editor*—A boy, aged 6 years, was referred to me for treatment because of a three plus Wassermann reaction. The child is apparently healthy, and physical examination reveals only a generalized adenopathy but no palpable spleen or liver. The test was made by his foster parents merely to make sure that the patient was free from syphilis. What treatment would you advise in this case? I had thought of starting with 0.3 Gm of neosarsphenamine every week for eight injections and then giving a bismuth compound orally. Would a spinal fluid test be indicated? Please omit name and address.

M D, Illinois

*ANSWER*—This boy, with generalized adenopathy and a three plus blood Wassermann reaction as the only physical evidences of congenital syphilis, will probably have to be regarded as having the disease and treated accordingly. It should not be forgotten that a well investigated history is of the utmost importance. Such a history probably cannot be obtained from the foster parents, in the case of this boy.

Without further informative history and with only the generalized glandular adenopathy as a definite physical observation, the serologic blood examination offers the best clue to a definite diagnosis. It is much safer, as a general rule, to use such laboratory observations as corroborative evidence in the diagnosis. In this case it would seem wise to repeat the blood Wassermann examination, and in addition to make the Kahn test on the patient's blood.

The treatment, if the diagnosis is established, may consist in the use of an arsenical in three different ways, intravenously, intramuscularly or orally. The arsenical treatment may be altered with a course of a preparation of bismuth or mercury, and a certain rest period between courses is absolutely essential.

The dosage for intravenous neosarsphenamine in children is 15 mg per kilogram of body weight. If this 6 year old boy weighs between 40 and 50 pounds (from 18 to 23 Kg), the dosage of 0.3 Gm of neosarsphenamine would be correct. It would be safer to start with a smaller dose and work up to the maximum. Sulpharsphenamine for intramuscular injection may be used in the dosage of 20 mg per kilogram of body weight. Acetarsonne may be given by mouth, commencing with dosages of 5 mg per kilogram of body weight, and increasing to 20 mg per kilogram daily.

A spinal fluid examination would be indicated either before treatment was commenced or at the end of each course of treatment. The examination of the spinal fluid may be positive without definite neurologic signs, and treatment should be vigorously conducted to obtain as complete a cure as possible.

#### NONGONORRHEAL URETHRITIS

*To the Editor*—A man, aged 28, single, who has had no venereal diseases, noticed a momentary itching in the urethra on the eighth day after exposure. The ninth day brought on itching periods of one or two minutes duration and recurred from four to six times that day. On the morning of the tenth day there was a watery milky white drop in the meatus. There was no nocturia or frequency. The woman in the case was married and has no history of gonorrheal infection. The fact that she has not infected her husband lends truth to the history. When I saw the patient on the tenth day I could not obtain a smear. An anterior urethral injection of 10 per cent mild silver protein was given and the patient put on internal medication with a urinary antiseptic. The following morning, smears were obtained from the slightly moist urethra. Occasionally there was a milky drop in the meatus. All smears were negative for gonococci but all smears showed pus cells and endothelial cells. Two or three of the earlier smears showed extracellular, gram negative diplococci diagnosed by different technicians as not gonococci. The first glass test of the urine showed many shreds, some of which sank to the bottom while others continued to float or remain suspended. There was no reddening or swelling of the meatus. The patient states that from four to six months prior to this occurrence he had used a prophylactic injection of a 1 per cent solution of the urinary antiseptic, which caused excruciating burning on urination for several days thereafter but that no discharge resulted. The patient has been treated with a 10 per cent solution of mild silver protein daily for the past six weeks. Some mornings a white drop of pus still shows up in the meatus. The smears have been negative for gonococci or any other bacteria. Another case, typical of many others, is that in which the subject has not been exposed to coitus for many months. There is a sudden urethral itching, followed by burning and frequency and then a scanty discharge of white pus, which is negative for bacteria. Can the first case be classified as a nongonorrheal infection? Is it likely that the prophylactic injection produced a stricture which is the cause of the present trouble, or is it due to the last sexual exposure? Is the treatment as given proper or is it apt to prolong the occasional discharge? What is the best procedure? What is the etiology of the second case and what is the treatment? What is meant by a "strain"? What causes the formation of pus if no bacteria are present? Is there an increase in the nongonorrheal type of urethritis at the present time? If so, what is it due to? Please omit name.

M D Wisconsin

*ANSWER*—There has been an increase of instances of nongonorrheal urethritis in the male since the use of occlusive pessaries in order to prevent impregnation and the administra-

tion of urethral prophylactic injections became popular. Some female genitals show an idiosyncrasy for vulcanized rubber, and the insertion of such pessaries is apt to produce vaginitis and endocervicitis, which in turn may infect the male urethra. This is especially true if stem pessaries are used. Prophylactic urethral injections with solutions of high concentration are apt to produce a urethral discharge of various duration. Any damaging of the urethral epithelium may lead to the production of pus. The routine treatment of nongonorrheal urethritis with silver salts is liable to maintain the discharge for an indefinite period. The term strain is quite often used for the flaring up of old infections provoked by alcoholic or venereal excesses, particularly if they are simultaneously indulged in. It may also be mentioned that the drinking of beer that is not sufficiently aged occasionally produces a nongonorrheal discharge. The treatment of nongonorrheal urethritis should be an inactive one: bland diet, refraining from alcohol and administration of any of the so-called urinary antiseptics. The urine is acidified by the intake of some mineral acid.

#### PREDETERMINATION OF SEX BY CONTROLLING REACTION IN VAGINA

*To the Editor*—An interested patient brought in a clipping from *Time* concerning predetermination of sex by alkalization or acidification with an inquiry as to its scientific status. I have a recollection of a similar theory some twenty years ago which I understand was ridiculed at the time and disproved. My impression is that this one is in the same category but I would appreciate your comment as authority to present to the inquirer, who rather takes it seriously. I warned her against the dangers of alkalosis and imbalance and other dangers not to be ignored. This pseudoscientific stuff should not be given publicity but when it is the profession has the duty of answering it intelligently. Please omit name.

M D, California.

**ANSWER**—In Unterberger's original work it was the alkalization and acidification of the vagina which—he claimed—determined the sex, and the patient was to take douches correspondingly. The quotation was wrongly made if a change of the alkali acid balance of the body is to be effected, and, naturally, such an attempt might be disastrous.

Futh tried to verify Unterberger's statements and found that women who showed a low vaginal acidity did have a preponderance of boys, but this finding was probably accidental.

The extra chromosome theory of the production of sex seems to have the best scientific foundation. Attempts to influence sex in mammals by changes in environment have failed up to the present, and if an alkaline medium does affect the fertilization, it must be assumed that it changes the chromosome of the female-producing spermatozoid or it may impair the sperm itself.

One is entitled to a prolonged healthy skepticism in this matter. Furthermore, if one admits that the alkali can change such a momentous catastrophic biologic action as the act of fertilization, one would logically fear the possibilities of other histologic or pathologic, perhaps catastrophic, changes in the resultant product of conception.

In one definite case in which the method was tried, unfortunately the soda douches produced a girl. The profession might be invited to publish individual experiences or the results of experiment.

#### TOXICITY OF CARBON DIOXIDE

*To the Editor*—I have within a comparatively short time observed two fatalities under anesthesia in which carbon dioxide was given in addition to nitrous oxide and oxygen. Could the carbon dioxide be responsible? How toxic is carbon dioxide? Please omit name.

M D Massachusetts

**ANSWER**—Carbon dioxide when administered with ample oxygen during or after anesthesia is entirely nontoxic. The air of the lungs normally contains 5 per cent of carbon dioxide from 7 to 10 per cent when inhaled with ample oxygen stimulates respiration and other vital functions. Experience indicates that a short inhalation of even as much as 20 per cent of carbon dioxide, provided ample oxygen is present, induces no ill effects on the heart or other organs. With either the 12 in which an ample supply of oxygen is afforded, it is often advantageous to administer from 5 to 10 per cent of carbon dioxide to stimulate breathing and the administration of carbon dioxide after anesthesia is the most effective known means of preventing postoperative pulmonary complication.

But a mixture of carbon dioxide with sufficient nitrous oxide to induce anesthesia necessarily contains an insufficient percentage of oxygen to support life. The concentration of nitrous oxide needed to induce anesthesia is close to that pro-

ducing asphyxia. This is true even when the only other gas present is oxygen. The addition of carbon dioxide would reduce the oxygen still further. Carbon dioxide with oxygen should be used for resuscitation from the collapse that sometimes follows the asphyxia of nitrous oxide anesthesia. But carbon dioxide cannot without serious danger be combined with the simultaneous administration of nitrous oxide.

#### CONVULSIONS IN ECLAMPSIA

*To the Editor*—Are convulsions per se in eclampsia or in a parturient woman dangerous and fatal in themselves or is it alone the underlying disturbances leading to the coma and convulsions that demand one's whole attention? Is an effort to stop a severe convulsion by the inhalation of a few whiffs of chloroform justified during such an emergency?

WILLIS P. BAKER, M D, Santa Ana, Calif.

**ANSWER**—The convulsions of eclampsia carry a small amount of danger in themselves but they are not the main cause of death. The underlying toxemia, or whatever it is that causes the convulsions, is the serious element. The convulsions carry the following risks. If the cerebral blood vessels are brittle, a hemorrhage of the brain may result. If the convulsions are frequent, the products of muscular activity accumulate in the blood and the kidneys may not be able to eliminate them. The cyanosis produced by the convulsions may increase acidosis. The muscular spasms may overstrain an already weakened heart. During the convulsion, and the coma following, the patient may aspirate foreign matter into the lungs, causing pneumonia. A convulsion may throw the woman on a hot stove and in other ways accidental injuries may result, besides the frequent biting of the tongue.

In spite of all these offenses, the convulsion is less dangerous than the use of an anesthetic such as chloroform intended to suppress them. In the first place, by the time the anesthetic can get in its work the actual convulsion is over and all that has been done is to add to the woman's stock of poisons and to damage her kidneys and liver still more. The answer to the second question therefore is No.

#### SIMPLE METHOD OF BLOOD SUGAR ESTIMATION

*To the Editor*—Can you recommend a reliable method of determining the blood sugar less cumbersome than the Folin-Wu or the Benedict method?

P N L, Chicago

**ANSWER**—The Folin-Wu method (*J Biol Chem* 41:367 [March] 1920) gained widespread acceptance and popularity soon after its introduction, so much so that the values with this method were accepted as a standard for a number of years. However, the results with this method average about 22 mg too high. The latest Benedict method (*J Biol Chem* 92:141 [June] 1931) gives blood sugar values that are materially lower, and probably comes close to giving the true dextrose content of the blood. Both of these copper methods require more chemical training, more complicated reagents and more care than the older trinitrophenol ("picric acid") method, first introduced by Lewis and Benedict (*J Biol Chem* 20:61 [Jan] 1915). For example, with the Folin-Wu method it is essential that one have a standard closely approximating the unknown. With the trinitrophenol method one standard is adequate over the whole blood sugar range from 50 to 1,000 mg. The results with the older trinitrophenol method are slightly higher (6 or 7 mg) than with the Folin-Wu method but this added difference is of little consequence, since the Folin-Wu method averages about 22 mg too high.

The simplest form of the trinitrophenol method is that described by Myers and Bailey (*J Biol Chem* 24:147 [Feb] 1916). Trinitrophenol is the only reagent employed in addition to the dextrose standard, and one cannot easily make a mistake with the method. Sufficient trinitrophenol is used to precipitate the blood proteins and render the filtrate saturated. When the filtrate is heated with carbonate, the yellow sodium picrate is reduced to the reddish-brown sodium picramate in proportion to the amount of sugar present. The dextrose standard is made up in saturated trinitrophenol which not only preserves the dextrose but also saves a subsequent step in the determination.

Briefly the method is as follows. Two cubic centimeters of blood is diluted to 10 cc by the addition of 8 cc of water and sufficient dry trinitrophenol (about 0.2 Gm) is added to precipitate the proteins and render the solution saturated. After thorough stirring and shaking, the mixture is filtered. Three cubic centimeters of this filtrate (equivalent to 0.6 cc of blood) is pipetted into a graduated test tube (sugar tube) and 3 cc of the dextrose standard in saturated trinitrophenol, containing

0.6 mg of dextrose, pipetted into a similar tube. To each tube is now added 1 cc of 20 per cent sodium carbonate, and the carbonate is mixed with the trinitrophenol solution. The tubes are next placed in a beaker of boiling water for fifteen minutes and then cooled. When cool, the standard is diluted to 10 cc and the unknown to some known volume (10, 15, 20 cc and so on) approximating the color of the standard. If the standard is set at 10 mm in the colorimeter, the dilution of the unknown times 100, divided by the reading of the unknown, will give the blood sugar in milligrams per hundred cubic centimeters.

As Somogyi has shown (*J Biol Chem* 83 157 [July] 1929), true figures for the blood sugar may be obtained with the Folin-Wu method after zinc precipitation. Myers and Root (*J Lab & Clin Med* 16 890 [June] 1931) have similarly shown that zinc will remove the non-sugar reducing substances in the trinitrophenol method. However, if one is going to this trouble it is better to use one of the copper methods.

If one desires to make analyses on finger blood, the Folin micro method is probably the most satisfactory. (For 0.1 cc of blood, see Folin and Malmros, *J Biol Chem* 83 115 [July] 1929. Folin and Svedberg, *ibid* 88 85 [Aug] 1930. For 0.025 cc see Jeghers and Myers, *J Lab & Clin Med* 15 982 [July] 1930.) The method is considerably more complicated than the trinitrophenol method.

#### WORMS IN BURIED BODIES

*To the Editor*—I have a patient who works in a cemetery as a grave digger. In the course of his work he has helped exhumate many bodies which had been buried from three weeks to fifty years. He tells me that it is no literary myth that 'worms' attack the bodies of a large percentage of those buried. He mentioned seeing maggot-like worms on the face of a corpse that had been buried only three weeks, in which case both the outer box and the coffin were in good condition. He mentioned having seen many bodies that had been buried for fifteen or twenty years in which the coffin had decayed allowing the earth to come in contact with the remains, which "were alive with worms." While perhaps this is not strictly a medical query, I should like to know how authentic these statements are, the zoological classification of these "worms," where they come from and how they get there. Please omit name.

M D Texas

*ANSWER*—Generally speaking, the statements of the grave digger are in accord with the facts. Maggots may make their appearance on the cadaver a few hours after death especially in warm weather. Sometimes maggots appear in unbelievably large numbers. Apparently the invasions on cadavers of various insects, especially beetles of different species (Coleoptera: Lepidoptera, Silphidae, Histeridae, Tenebrionidae) may follow a more or less regular course, owing perhaps, it has been thought, to the different odors that develop. It is known that certain beetles make their appearance after months or even years. The order will vary with season and locality, stage and progress of putrefaction. Enough has been said to show that the entomology of the cadaver is an intricate subject, of which only one or two high points can be touched here. The effect of modern American methods of "embalming" on the cadaveric fauna has not been studied.

#### HYPOTHYROIDISM

*To the Editor*—A woman, aged 26, had a thyroidectomy three years ago. Three months later her periods began to get irregular. She would pass large clots of blood for three or four months at a time and would have considerable pain. One year after operation she began to lose her energy, and she noticed that her hair became dry and that she was inactive sexually. She fainted easily and easily became nervous, but in a different manner from before. Trifling things such as moving signs bothered her. I saw her about this time and my diagnosis was hypothyroidism, so desiccated gland was given in good amounts with excellent results for a time. This fall, however the symptoms became much worse. She has been taking 5 grains (0.3 Gm) of desiccated thyroid every other day for more than a year and an increase in the amount taken did no good. She states that she has a peculiar taste on her tongue and that her body seems to crave something. I have given her four injections of a soluble extract from the anterior lobe of the pituitary with no results. Have I stopped too soon or what does this patient need? Please omit name.

M D, Nebraska

*ANSWER*—This patient's response to thyroid medication suggests strongly that the diagnosis of hypothyroidism was correct. However, all users of thyroid particularly in postoperative thyroidectomy patients, have learned the necessity of controlling thyroid doses by frequent basal metabolism readings. It is well known that there is no mathematical standard of thyroid dosage and that some patients present marked symptoms of myxedema without great changes in the basal metabolism. However, it is also recognized that a basal metabolism considerably lower than normal may be associated with no active signs of myxedema.

In the present instance it would seem wisest to find the basal metabolic rate and to give sufficient thyroid to raise it to normal. The dosage necessary to attain such an objective may be considerably higher than the amount indicated. After all, 0.3 Gm of desiccated thyroid every other day is not a large dose in a severe case of hypothyroidism.

It is also suggested that a pelvic examination is indicated to exclude any pathologic condition of the pelvic organs. Naturally, any abnormal condition of the pelvic organs should be corrected, and if there is any secondary anemia this also should receive attention. The dose of anterior pituitary might well be continued if the patient is not relieved by larger thyroid medication.

One other factor must be considered, and that is the well known psychologic disturbances frequently associated with the diseases of the thyroid gland. It is, of course, impossible to comment on this in this patient except to suggest that it be looked into.

#### BOILED OR RAW MILK IN INFANT FEEDING

*To the Editor*—When, or at what age, is it safe to give a young child or baby "certified," or grade A, raw milk? Many physicians, including my own, advise boiling grade A milk. How much value is there in buying grade A milk, which is more expensive, if one has to boil it and kill most if not all of the vitamins contained in it? It would seem to me that, for the average family of small income, it would be just as well to buy regular pasteurized milk and boil that. Is this assumption correct? My particular reason for writing is to determine at what age I may safely stop giving boiled milk to my baby. Could one stop boiling milk sooner if pasteurized milk was used instead of grade A milk? Several books I have consulted say that boiled milk should be used until the child is 2 years old. Of course, I understand that the vitamin deficiency may be made up by appropriate doses of cod liver oil and orange juice. I ceased boiling milk for my first child at about 1 year, and did not have any apparent trouble.

D D S, Michigan

*ANSWER*—The production of certified milk has been an invaluable gift of the dairy industry to the consumers of milk and milk products and has demonstrated that it is possible to provide clean milk.

There is a division of opinion whether all milk should be boiled, though there is something to be said on both sides of the question. Boiling milk, including that which is certified, destroys the possibility of bacterial invasion, as even certified milk may become infected with pathogenic germs in transport or in the home.

All milk that is used for infant feeding should be as clean and free from bacterial invasion as possible, and merely boiling the milk does not remove filth or toxic products. Boiled milk still retains its vitamin A content, while it is true that boiling milk destroys vitamin C, vitamin A is not affected. The deficiency may be supplied by the use of vitamin-containing substances.

It is equally important to recall that boiling cow's milk renders it more digestible, softens the curd and prevents indigestion and diarrheal disorders. Whether one should boil pasteurized milk depends on the source of the milk supply and the efficiency of pasteurization, but the fact still remains that boiling even pasteurized milk renders the curd softer and the milk more easy of digestion.

The question at what age one may stop boiling the baby's milk may be replied to by asking another question. Why stop boiling the milk, if by this simple process one renders it more digestible and destroys the numerous disease dangers that lurk in cow's milk? Drinking raw milk is an acquired taste like eating raw meat. Many persons correctly have a repulsion against partaking of either in the raw state.

#### PERSISTENT EDEMA OF FOOT AFTER OPERATION

*To the Editor*—I have had quite a few cases of persistent edema of a foot following fracture of the base of metatarsal bone, and have not been able to clear this up. I have performed Rood's operations only to have this stubborn edema return. Kindly advise as to treatment. Please omit name.

M D, New York

*ANSWER*—The patient should be put to bed. Hot fomentations should be applied, saturated epsom salt solution being used combined with elevation of the foot and lower part of the leg on one pillow. Radiant heat, gentle massage and the application of a long foot elastic bandage going from just above the ankle to the tips of the toes should be helpful. The elastic is to be worn when the patient is out of bed, and the application when the patient is in bed with the foot elevated. A high lace shoe should be worn. Special exercises for the transverse arch should be done. The feet should be massaged twice daily with equal parts of ointment of rose water and any anodyne ointment, and foot and leg contrast sprays should be used.

# Council on Medical Education and Hospitals

## COMING EXAMINATIONS

ALASKA Juneau March 14 Sec., Dr Harry C DeVighe, Juneau  
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS Milwaukee,  
June 12 Sec. Dr William H Wilder, 122-S Michigan Blvd, Chicago  
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The written  
examination will be given in cities of the United States and Canada  
where there is a Diplomate who may be empowered to conduct the  
examination April 1 The general oral clinical and pathological exami-  
nation will be held in Milwaukee, June 13 Sec., Dr Paul Titus  
1015 Highland Bldg Pittsburgh  
AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee June 12 Sec.,  
Dr W P Wherry 1500 Medical Arts Bldg Omaha  
CALIFORNIA Los Angeles, Feb 27 to March 2 Sec., Dr Charles B  
Pinkham 420 State Office Bldg Sacramento  
CONNECTICUT Regular Hartford, March 14-15 Endorsement Hart-  
ford, March 28. Sec., Dr Thomas P Murdock 147 W Main St,  
Meriden, Homeopathic New Haven March 14 Sec. Dr Edwin C M  
Hall 82 Grand Ave New Haven  
IDAHO Boise, April 4 Commissioner of Law Enforcement, Hon  
Emmitt Pfost, Boise  
MAINE Portland March 14-15 Sec., Dr Adam P Leighton Jr,  
192 State St. Portland  
MASSACHUSETTS Boston March 14-16 Sec. Dr Stephen Rushmore  
144 State House Boston  
MINNESOTA Basic Science Minneapolis, April 4-5 Sec. Dr J C  
McKinley 126 Millard Hall University of Minnesota Minneapolis  
MONTANA Helena April 4 Sec. Dr S A Cooney 7 W 6th Ave,  
Helena  
NEW HAMPSHIRE Concord March 16-17 Sec. Dr Charles Duncan,  
Concord  
OKLAHOMA Oklahoma City, March 14-15 Sec. Dr J M Byrum,  
Shawnee  
PUERTO RICO San Juan, March 7 Sec. Dr O Costa Mandry,  
Box 536, San Juan  
RHODE ISLAND Providence April 6-7 Dir. Dr L A. Round 319  
State Office Bldg, Providence  
TENNESSEE Memphis March 23-24 Sec. Dr A B DeLoach Medical  
Arts Bldg Memphis  
WEST VIRGINIA Charleston March 14 Sec., Dr W T Henshaw  
State Health Department Charleston

## New York June Report

Mr Herbert J Hamilton, chief, Professional Examinations  
Bureau, reports the written examination held in Albany, Buffalo,  
New York and Syracuse, June 27-30, 1932 The examination  
covered 9 subjects and included 10 questions An average of  
75 per cent was required to pass Six hundred and three  
candidates were examined, 471 of whom passed and 132 failed  
The following colleges were represented

College	PASSED	Year Grad	Number Passed
Yale Univ School of Med	(1925) (1929) (1930) (1932)	(1932)	4
Georgetown University School of Medicine	(1932 9)	(1932 9)	9
George Washington Univ School of Med	(1931, 2) (1932)	(1932)	3
Howard University College of Medicine	(1929)	(1929)	1
University of Georgia Medical Department	(1929)	(1929)	1
Loyola University School of Medicine	(1932 2)	(1932 2)	2
Northwestern University Medical School	(1931)	(1931)	1
Rush Medical College	(1931) (1932 4)	(1932 4)	5
University of Louisville School of Medicine	(1930)	(1930)	1
Johns Hopkins Univ School of Med	(1926) (1929) (1931)	(1931)	3
University of Maryland School of Medicine and College of Physicians and Surgeons	(1931) (1932 19)	(1932 19)	20
Boston Univ School of Med	(1928) (1929) (1930) (1932 6)	(1932 6)	9
Harvard Univ Med School	(1924) (1929), (1930), (1932 3)	(1932 3)	6
Tufts College Med School	(1928) (1929) (1931 3) (1932)	(1932)	6
University of Michigan Medical School	(1929)	(1929)	1
St Louis University School of Medicine	(1930), (1932)	(1932)	2
Washington University School of Medicine	(1932 3)	(1932 3)	1
Creighton University School of Medicine	(1932 2)	(1932 2)	2
Albany Medical College	(1931) (1932 16)	(1932 16)	17
Columbia Univ Coll of P and S	(1930) (1931) (1932 22)	(1932 22)	24
Cornell Univ Med Coll	(1929) (1930 2), (1931 2) (1932 16)	(1932 16)	21
Long Island College of Medicine	(1931 2) (1932 77)	(1932 77)	79
New York Homeopathic Medical College and Flower Hos- pital	(1916) (1932 52)	(1932 52)	53
Syracuse University Coll of Med	(1926) (1931) (1932 30)	(1932 30)	31
University and Bellevue Hosp Med Coll	(1930) (1932 79)	(1932 79)	80
University of Buffalo School of Med	(1931) (1932 34)	(1932 34)	35
University of Rochester School of Medicine	(1932 6)	(1932 6)	6
University of Cincinnati College of Medicine	(1932)*	(1932)*	1
Hahnemann Med College and Hospital of Philadelphia	(1932)	(1932)	1
Jefferson Medical College of Philadelphia	(1931) (1932 4)	(1932 4)	5
Temple University School of Medicine	(1932)	(1932)	1
University of Pennsylvania School of Med	(1930) (1931)	(1931)	2
Woman's Medical College of Pennsylvania	(1931)	(1931)	1
Vanderbilt University School of Medicine	(1929)	(1929)	1
University of Texas School of Medicine	(1926)	(1926)	1
University of Vermont College of Medicine	(1932)	(1932)	1
Medical College of Virginia	(1929)	(1929)	1
DePauw University Faculty of Medicine	(1932 2)	(1932 2)	2
Georgetown University Faculty of Medicine	(1930) (1931 2)	(1931 2)	3
McGill University Faculty of Medicine	(1929) (1932 7)	(1932 7)	8
Medizinische Fakultät der Universität Wien	(1931 3)†	(1931 3)†	3
Université Catholique de Louvain Faculté de Médecine	(1930)	(1930)	1

King's College Hospital Medical School University of London	(1932)†	1
Faculty of Medicine	(1932)†	1
Medizinische Fakultät der Thüringischen Landesuniversität, Jena	(1925), (1928)	2
Regia Università di Napoli Facoltà di Medicina e Chir- urgia	(1923)	1
Regia Università di Palermo degli studi Facoltà di Medi- cina e Chirurgia	(1928)	1
Regia Università di Roma degli studi Facoltà di Medicina e Chirurgia	(1928)	1
University of Edinburgh Faculty of Med	(1931) (1931, 4)†	5
Osteopaths		2

College	FAILED	Year Grad	Number Failed
Georgetown Univ Sch of Med.	(1928, 2) (1931 2), (1932 9)	(1932 9)	13
George Washington University School of Medicine	(1931 2)	(1931 2)	2
Howard University College of Medicine	(1928) (1930)	(1930)	2
Loyola University School of Medicine	(1931, 2)	(1931, 2)	2
University of Kansas School of Medicine	(1932)	(1932)	1
Johns Hopkins University School of Medicine	(1927)	(1927)	1
University of Maryland School of Medicine and College of Physicians and Surgeons	(1929), (1932)	(1932)	2
Boston University School of Medicine	(1932)	(1932)	1
Tufts College Medical School	(1928)	(1928)	1
University of Michigan Medical School	(1930)	(1930)	1
St. Louis University School of Medicine	(1928), (1930)	(1930)	2
Washington University School of Medicine	(1928), (1931)	(1931)	2
Creighton University School of Medicine	(1929) (1930)	(1930)	2
University of Nebraska College of Medicine	(1930)	(1930)	1
Albany Medical College	(1932, 2)	(1932, 2)	2
Columbia Univ Coll of Phys and Surgs	(1929) (1932, 2)	(1932, 2)	3
Cornell University Medical College	(1931) (1932)	(1932)	2
Long Island College of Medicine	(1930), (1931), (1932, 5)	(1932, 5)	7
New York Homeopathic Med Coll and Flower Hosp	(1932, 7)	(1932, 7)	7
Syracuse University College of Medicine	(1931), (1932, 4)	(1932, 4)	5
University and Bellevue Hospital Medical College	(1927), (1931, 2) (1932, 6)	(1932, 6)	9
University of Buffalo School of Medicine	(1932 8)	(1932 8)	8
University of Rochester School of Medicine	(1931)	(1931)	1
Hahnemann Medical College and Hospital of Philadelphia	(1931) (1932)	(1932)	2
Jefferson Medical College of Philadelphia	(1930)	(1930)	1
Temple University School of Medicine	(1931)	(1931)	1
Medical College of the State of South Carolina	(1931)	(1931)	1
University of Vermont College of Medicine	(1931) (1932 2)	(1932 2)	3
Medical College of Virginia	(1932)	(1932)	1
Queen's University Faculty of Medicine	(1927) (1930)	(1930)	2
McGill University Faculty of Medicine	(1931, 2)	(1931, 2)	2
Karl Franzens Universität Medizinische Fakultät Graz	(1931)	(1931)	1
Medizinische Fakultät der Universität Wien	(1926) (1926)†	(1926)†	2
Deutsche Universität Medizinische Fakultät Prag	(1925)	(1925)	1
Friedrich Alexanders Universität Medizinische Fakultät Erlangen	(1930)†	(1930)†	1
Queen's University Faculty of Medicine Ireland	(1925)	(1925)	1
Regia Università di Genova degli studi Facoltà di Medicina e Chirurgia	(1930) (1931)†	(1931)†	2
Regia Università di Napoli Facoltà di Medicina e Chirurgia	(1923 2), (1927 2) (1929)	(1929)	5
Regia Università di Palermo degli studi Facoltà di Medicina e Chirurgia	(1920) (1920),† (1928)	(1928)	3
Regia Università di Roma degli studi Facoltà di Medicina e Chirurgia	(1928),† (1931 2)	(1931 2)	3
Universitatea Regele Ferdinand I in din Cluj Facultatea de Medicină și Farmacie	(1926)	(1926)	1
University of Aberdeen Faculty of Medicine	(1905)	(1905)	1
University of Edinburgh Faculty of Medicine	(1931)†	(1931)†	1
Osteopaths			20

Mr Hamilton also reports 154 physicians licensed by endorse-  
ment from May 1 to Nov 1, 1932 The following colleges  
were represented

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Stanford University School of Medicine	(1929)	(1929)	California
University of Colorado School of Medicine	(1919)	(1919)	Colorado
Yale University School of Medicine	(1929) N B M Ex	(1929)	N B M Ex
Georgetown University School of Medicine	(1929) New Jersey	(1929)	New Jersey
(1931) (1932) Maryland			
George Washington University School of Medicine	(1930)	(1930)	Maryland
Howard University College of Medicine	(1930)	(1930)	Maryland
(1931) Maryland N B M Ex Virginia			
Emory University School of Med	(1927) Georgia	(1931)	N B M Ex
Loyola University School of Medicine	(1932)	(1932)	Iowa N B M Ex
Rush Medical College	(1926) Illinois	(1931)	N B M Ex
College of Physicians and Surgeons of Chicago	(1910)	(1910)	Wisconsin
Indiana University School of Medicine	(1927), (1931)	(1931)	Indiana
State University of Iowa College of Medicine	(1926)	(1926)	
(1928) (1929 2) (1931 2) Iowa			
University of Kansas School of Medicine	(1929) N B M Ex	(1929)	N B M Ex
University of Louisville Medical Department	(1912)	(1912)	Penna
Tulane University of Louisiana School of Medicine	(1930) N B M Ex	(1930)	N B M Ex
College of Physicians and Surgeons of Baltimore	(1906)	(1906)	Maryland
(1910) Massachusetts			
Johns Hopkins University School of Medicine	(1921)	(1921)	Minnesota
(1928 2) N B M Ex (1926), (1927) (1928)			
(1929) (1930) (1931) Maryland			
University of Maryland School of Medicine	(1900)	(1900)	Maryland
University of Maryland School of Medicine and Col- lege of Physicians and Surgeons	(1916) (1931 2)	(1932)	Maryland
Boston University School of Medicine	(1916)	(1916)	Virginia
Harvard University Medical School	(1929 4) (1930) (1931) N B M Ex	(1930)	N B M Ex
Tufts College Medical School	(1926) Massachusetts	(1930)	N B M Ex
University of Michigan Department of Medicine	(1912)	(1912)	Michigan
University of Michigan Medical School	(1924 2)	(1924 2)	Michigan
University of Minnesota College of Med and Surg	(1899)	(1899)	Minnesota

possible and the x-ray tube at a distance of 7 feet from the film. Measurements in growth in length of the bones were made from the roentgenograms. In experiments designed for histologic study, the exposed and nonexposed bones were removed, fixed in solution of formaldehyde, decalcified, sectioned, and stained with hematoxylin and eosin. A comparison of growth curves in both normal and irradiated bones in all experiments shows conclusively that the inhibitory effect of the roentgen ray on bone growth is a change in rate of growth and not a change in duration of growth. No instance of complete cessation of growth in the irradiated bone before complete cessation of growth in the corresponding normal bone has been observed. The effect of a certain amount of irradiation on the growth in length during any period is about the same regardless of the time before this period at which the exposure occurred. Not only is this important from its clinical application, but it may have important significance in the consideration of the possible mechanism by which irradiation inhibits growth of bones. If the capacity for growth of a bone lies within the bone, it must be assumed to be determined by some component of the bone which, for purposes of discussion, may further be assumed to be the cells of the epiphyseal cartilage. Present knowledge of the vital characteristics of a cell is not sufficient for a discussion of the possibilities of producing in the cell changes that would be constantly reproduced in successive cell generations. Furthermore, it would seem as if a difference in the vulnerability of cells were evident from the histologic appearances of tissues that have been exposed to the roentgen ray. Some of the cells at least show no evidences of abnormality, and others are obviously disintegrated. Instead, therefore, of assuming that cells in the act of division are more susceptible to the destructive influence of the roentgen ray, we are assuming that cells with a capacity for rapid division are more susceptible than those with a capacity for slower division.

#### Recurrent Ectopic Pregnancy

DR ALFRED R JONES, Roanoke, Va. Three cases of repeated tubal pregnancy are reported. The percentage of normal pregnancies following a tubal pregnancy is much greater than the percentage of repeated tubal pregnancies. The opinion is expressed that, in the absence of gross disease of the uninvolvement tube, it should not be removed.

#### Chorio-Epithelioma

DR WILLIAM T BLACK, Memphis, Tenn. A uterine hemorrhage, or a blood-tinged discharge following pregnancy (especially a hydatidiform mole), with a positive Aschheim-Zondek test, should arouse suspicion of a chorio-epithelioma. While 45.7 per cent of chorio-epitheliomas follow moles, only about 1 per cent of moles are followed by chorio-epithelioma, therefore, a hysterectomy or radium in large doses is not justifiable in young women with moles. The diagnosis of typical cases of chorio-carcinoma from the histologic evidence and clinical symptoms should not be difficult. A panhysterectomy should be performed when a diagnosis is made, which should be followed by irradiation. As embryonic cells are very sensitive to radium rays, radium is a good prophylactic and curative agent in chorio-epithelioma in selected cases. Repeated Aschheim-Zondek tests following moles and especially following hysterectomy for chorio-epithelioma are of paramount prognostic importance. Patients with mole pregnancies should be watched for several months. However, if an Aschheim-Zondek test is negative, one may feel reasonably assured of no further trouble.

#### Hysterectomy

DR F WEBB GRIFFITH, Asheville, N C. In order to determine the results of hysterectomy in the hands of an average surgeon in an average hospital, I have reviewed 700 consecutive abdominal hysterectomies, exclusive of those done for carcinoma of the cervix. As I performed all these operations, they have a more or less uniformity for comparison. I shall not discuss vaginal hysterectomy. I hope and believe that the present indications for hysterectomy will be met to a great extent by some other yet unknown but less radical measures. Radium is the treatment *par excellence* for carcinoma of the cervix, while surgery is just as strongly indicated in carcinoma of the body of the uterus. The mortality following hysterectomy

in the different clinics varies from less than 1 per cent up to practically 9 per cent. The mortality in this series of 700 hysterectomies was 2.15 per cent. Certainly, therefore, double that mortality, or 4.37 per cent, should be the upper limit in any reputable hospital. The greatest conservatism should be practiced in dealing with the ovaries in the non-inflammatory groups, but in the cases of pelvic inflammatory disease one is justified in being more radical. The healthy outdoor life of the woman in the country is an important factor, tending to lessen the severity of the artificial menopause.

#### Presidential Address Surgery and Its Relation to Society

DR R S CATHCART, Charleston, S C. Surgery is affected by the constantly changing social order. With every change there are always some professional men alarmed at the possible dangers confronting the fundamentals of the practice of medicine. The attitude of society toward the surgeon and the attitude of the surgeon toward society is crystallizing in a new form, and many members of the profession are seriously thoughtful over certain phases of the situation. While the course of medicine has suffered setbacks in the past and may suffer them again, the fact remains that advancement has been made and the belief is that it will continue to be made. We may be assured that ultimately the greatest good to the greatest number will result, even though it is not outside the realm of possibility for a period of chaos to intervene. The manner in which the social relations of medicine evolve is largely within the guidance of the profession. Should it pursue with arrogance a course that ignores the public interest and demands the preservation of present conditions, without doubt the control of medical matters will be taken from the profession. On the other hand, if it pursues with humility a course that will develop the best interests of humanity, it is certain that the fundamentals of scientific and ethical medicine will be preserved and the profession will be allowed to govern its growth. The main danger seems to come from ignoring public interest in medical matters, and from a desire by the public for change in the practice of medicine. Just how strong these sentiments may be is not clear, but the rumblings are heard. The socialization of medicine or of state medicine in phrases that are interpreted according to individual interests. To condemn and attack all forms of socialized medicine is poor policy. It is flinging a challenge to the trend of the time and that challenge will certainly be accepted. Already a measure of state medicine exists. It is our duty to direct it in the right channels. Any form of state medicine including hospitals, should be entirely out of politics. It will be difficult to secure the best surgical service for people at large if such service is selected by political preferment rather than professional competence. Appointments of this kind will be obliged to have a deleterious effect on surgery. It will be difficult to maintain standards if the present trend of state medicine is followed. Scientific research is necessary for the progress of medicine, and the incentive for such work is generally lacking in medicine under governmental control. The younger men should encourage the development of this field.

#### Acute Suppurative Cholangitis

DR FRANK BOLAND, Atlanta, Ga. A Negro, aged 35, entered the Grady Hospital, March 27, 1932, complaining of pain in the abdomen, sweats and chilly sensations. His pulse was 104, respiration 22, and temperature 103.6 F. Three days before admission, while "heading" a bale of cotton, he felt a sudden pain in the region of the umbilicus. His suffering for half an hour was intense, but the pain was felt only intermittently when he entered the hospital. During the preceding five weeks the patient had experienced several attacks similar to this one, but less severe. No history of previous illness could be obtained, except that for several months he had noticed a hard lump on the right side of the rectum, which proved to be an unhealed fistulous tract, with considerable discharge. He was apparently very sick. The eyes were deeply jaundiced. The abdomen was distended, rigid in the upper half, and slightly tender. The liver was moderately increased in size. April 11, a roentgenogram of the abdomen with a barium sulphate enema showed only a dilated colon. Typhoid, malaria and other fevers were ruled out by the laboratory, and there was no response to quinine therapy. Amebas could not be demonstrated. One



blood culture was positive for staphylococci. The icterus index was 37.5. The blood Wassermann reaction was negative. The patient's blood counts were normal for the first two weeks he was in the hospital, after which the leukocytes rose to 11,000, with polymorphonuclears 84 per cent. The temperature ran a septic course, varying from 98 to 103.6 F, and the pulse from 70 to 130. Operation, April 15, under gas anesthesia, showed a jaundiced peritoneum. There was no free fluid, and tubercles were not present. The liver was of normal color and was indurated in the right lobe, as usually seen in abscess. This indurated area was aspirated in six or eight places with a needle of large caliber, but no pus was obtained. The head of the pancreas was swollen and hard. Several enlarged glands were felt in the portal fissure. The distended gallbladder contained normal looking bile and no stones. The mucous membrane seemed healthy, but a culture taken at this time later grew short-chain streptococci. Cholecystostomy was done. The common duct appeared to be normal. There was no evidence of disease in the spleen or appendix. The anal fistula was opened and packed. Five days later it became necessary to perform suprapubic cystostomy for urinary retention probably due to urethral stricture. The patient died nine days after the abdominal operation. Autopsy showed a liver weighing 1,900 Gm. All the biliary ducts were enlarged, and dissection found them filled with greenish, purulent exudate throughout, even into the smallest terminal branches. The gallbladder showed no inflammation nor leakage from around the cholecystostomy tube. There was an abscess in the head of the pancreas, and the pancreatic ducts were filled with pus. Smears demonstrated no amebas but numerous streptococci and staphylococci. A few small stones were discovered in some of the branches of the hepatic duct. The anatomic postmortem diagnosis was suppurative cholangitis and pancreatitis.

#### Chronic Abscess of Liver

DR K. H. AYNESWORTH, Waco, Texas. There are reported three cases of chronic liver abscess ranging from five to twelve years in duration. None of the patients were known to have suffered from any diarrheal ailments. One patient, after several weeks of drainage, had *Ameba histolytica* in the discharge from the wound. The others had only the common organisms of infection. Every patient had suffered from chronic ill health with periods of apparent freedom from disease, but at no time was any one in normal health. One patient died from blood stream infection after the abscess of the liver had healed, one patient had a secondary subdiaphragmatic abscess which healed after drainage. All patients had a simple drainage operation.

#### Abscess of the Liver

DR HERBERT B. GESSNER, New Orleans. This paper reviews about 100 cases of abscess of the liver recorded in the New Orleans Charity Hospital between the years 1916 and 1932. Ninety-six cases were verified, fifty-eight of the patients were discharged and thirty-eight died, a mortality of 39.58 per cent. A comparison on the basis of parasites found was made. Counting as amebic the cases in which smear and culture were negative with those in which the pus or the feces showed amebas, a total of fifty-six cases was arrived at with nineteen deaths, a mortality rate of 33.9 per cent. The cases showing staphylococcus, streptococcus or *Bacillus coli* infection gave a mortality rate of 37.9 per cent. Cases noted as presenting large abscesses showed twenty-six recoveries and fourteen deaths, a mortality of 35 per cent, a little below the general rate of 39.58 per cent. Some little comfort was derived from the comparative mortality in white persons and Negroes, the former showing a 30.1 per cent rate the latter 51.1 per cent, probably as a result of greater delay in seeking treatment. In the series of ninety-six cases 55.2 of the patients were white and 44.8 per cent Negroes. Examining other phases of the record, it was found that two cases gave a history of trauma, thirty-three out of ninety-six gave a history of diarrhea of importance recent or old. Six showed jaundice on admission. In thirty-seven cases (72 per cent) the roentgen examination showed a high right lobe of the diaphragm while in eighteen (28 per cent) this diagnostic aid was absent. In sixty cases (62 per cent) there was a definite leukocytosis in fifteen (25 per cent) no leukocytosis. One patient reported ten years spent in the tropics, two were steamship firemen one of whom told a stay in the tropics, while another very likely had

been similarly exposed. Aside from these cases, occupation and residence had no perceptible influence. Three were recurrent cases, a previous operation having shown abscess of the liver. The relative proportion of male and female patients was 92.8 per cent males, 7.2 per cent females. Three patients had involvement of the right pleural cavity, one with bronchohepatic fistula, a fifth came in with hemoptysis. Of these five, four died, a mortality rate of 80 per cent. The thirty-eight fatal cases yielded twelve autopsies. In five cases multiple abscesses were found, in two cases free blood was found in the abdomen (200 and 1,500 cc, respectively), in three there was pneumonia and in two there was nothing noteworthy besides the single abscess. In one of the three pneumonia cases there was perforation into the colon. No case presented cerebral or splenic abscess.

#### Surgical Treatment of Trigeminal Neuralgia

DR ADRIAN S. TAYLOR, Birmingham, Ala. The radical operation has been so systematized that it has become relatively simple. I have done the subtotal section of the sensory root in Birmingham thirty-seven times without a death, and with permanent cure in all cases. One patient had a return of pain and it was necessary to cut additional fibers eighteen months later. The reexposure was easy, no trouble was experienced from hemorrhage, the uncut fibers were easily identified, and permanent relief followed their section. In two patients there was a temporary weakness of the external rectus. In one there was a complete facial palsy beginning the seventh day after operation and gradually becoming complete. The explanation of this paralysis of the seventh nerve lies in the possibility of trauma transmitted from the gasserian ganglion through the great superficial petrosal nerve to the ganglion of the knee of the seventh. At this point this nerve lies in a bony canal, and slight trauma might cause sufficient edema of the nerve to cause its interruption in its bony canal. In this particular case, power in the orbicularis was lost, and a colleague, Dr. Frank Clements, kindly did a partial tarsorrhaphy to protect the exposed cornea. In this procedure, temporary synechiae were formed between the edges of the upper and lower lids. Full power returned within a year, the lids were separated, and the patient has remained well without any injury to the eye. Trichlorethylene is now being used as treatment by inhalation. It has a selective action on the sensory part of this nerve. From twenty to thirty drops three times a day are inhaled from a handkerchief by the patient while reclining. Relief may be afforded in a few days. If it is not experienced in four or five weeks, the treatment is discontinued. Palliative neurectomies or alcohol injections affording temporary relief may be wise. Radical operation is safer than alcoholic injection of the ganglion.

#### Primary Tuberculosis of Spleen

DR H. R. SHANDS, Jackson, Miss. In the past two years I have operated in three cases of primary tuberculosis of the spleen in which a correct preoperative diagnosis was made. I believe it fairly certain that by means of a roentgenogram of the splenic area a correct diagnosis may be made in the vast majority of cases of chronic primary tuberculosis of the spleen.

#### Hemolytic Jaundice Five Splenectomies in One Family

DR WALTER D. WISE, Baltimore. Six cases of chronic congenital hemolytic jaundice with splenectomy are reported. Five cases were definitely familial, and in one family. Four patients were quite ill, one case was complicated by nephritis and severe gout, one by pyelitis and one by marked optic atrophy. One of the two adults had gallstones, two had accessory spleens. After operation one had pneumonia and lung abscess, two had mild postoperative wound infections, one having numerous skin infections about the face, another about the fingers. All patients were promptly relieved of jaundice, all except one had prompt improvement of anemia and his ultimate improvement was satisfactory, in none of the reexamined patients did the fragility of the red cells become normal. There was no operative or hospital mortality. One patient with nephritis and gout died some months later of cerebral hemorrhage and uremia. Five patients are living and in good health five years, two years and ten months, two and a half years, two years and two months and nine months after operation. Bone changes have been slight. The optic nerve involvement in one case is the only one so far reported.



### Selective Collapse in Treatment of Tuberculosis

DR FRANK S JOHNS, Richmond, Va A review of 100 cases in which operation was performed for pulmonary tuberculosis, in all of which some form of thoracoplasty was done, shows interesting results in the most recent group, in each of which only a limited selective collapse operation was done. I have followed this small series of cases closely. The results have been better with these than with other patients who had the complete or standard thoracoplasty. The selective operation has proved definitely less hazardous. The majority of these cases were completed in one stage and the number of days in the surgical division were correspondingly reduced. The thirty-three patients of this series have had only the upper five to seven ribs resected, the length of the section removed depending on the size of the cavity. In every apical case, large sections of the first rib should be resected, for in these selective cases the first rib is literally the key to the situation. It has been well described as "the keystone of the thoracic dome." For a few of the cases, the first and second ribs have been removed entirely. The size of the cavity and its location are the governing factors in my choice of procedure. A patient who has an apical cavity with a sound lower lobe should have the cavity in the apex obliterated, but the good lower lobe should not be handicapped by the compression resulting from a complete thoracoplasty. I firmly believe that the cavity should be closed, even if it requires multiple stages of operation. In several cases I have found it necessary to do an anterior resection of the ribs in addition to the posterior operation. The collapse of the cavity is essential to the cure of the patient. Great benefit is derived by selective groups of patients with pulmonary tuberculosis from the operations on the phrenic nerve. When surgery of the phrenic nerve was indicated, alcohol injections, crushing of the nerve and phrenicectomy have given surprisingly good results. In a small percentage of cases these results were so satisfactory that no further selective collapse operation was indicated. I now advocate and practice the importance of allowing this less extensive and safe operation on the phrenic nerve to prove its utmost usefulness before I proceed with a thoracoplasty. I have abandoned my former plan of doing this operation as merely a preliminary or index to a more radical procedure. It has earned a place of its own and should be accorded plenty of time after the operation to effect its maximum results. I urge a more intensive surgical treatment of patients with pulmonary tuberculosis. Pneumothorax is the recognized primary collapse treatment of choice. Selective extrapleural thoracoplasty ranks second in my hands. Phrenicectomy is third, with its varied procedure and application.

### Arachnidism

DR LLOYD NOLAND, Birmingham, Ala *Latrodectus mactans* is perhaps the only really poisonous spider in the United States. This spider is shiny, coal black and usually brilliantly marked in red or yellow or both, the most constant being an hour-glass-shaped bright red marking on the ventral surface of the abdomen. The female, the one responsible for the bites, may attain a half inch in length, with a leg spread of as much as two inches. The "black widow," so called because of its custom of eating its mate, is usually found alone. It builds a coarse web in dark or dimly lighted places, the seats of outdoor toilets seeming to be frequently favored, but instances are increasing of its invasion of habitations, garages, automobiles, and even of beds in which persons are sleeping. This spider is seemingly fearless, instantly attacking anything coming near it. In the eight year period 1924-1932, twenty-nine patients with arachnidism have been admitted to the Employees' Hospital at Fairfield, Ala. In twenty of these patients the bite was received on the genitals, in nine on other parts of the body, such as the leg, finger, hand and knee. In seventeen cases the bite was received in an outdoor privy, other bites were received variously, such as in a garage, in an automobile, two in bed, two in the field, and two in houses. In every case the symptoms have presented a most dramatic picture, of which the following is an instance. J. T., a Negro, aged 43, was admitted with a diagnosis of acute intra-abdominal lesion, probably perforating ulcer. The history was as follows. About 3 a. m. the patient, as a result of a large dose of epsom salt, found it necessary to go to an outdoor toilet, where he thought that something bit him on the scrotum. About five or ten minutes

later he began to have very severe pain in the right thigh. The pain progressed, to involve the lumbosacral region, the hips, the entire abdomen and the right chest. The patient was admitted to the hospital about three hours following the beginning of the attack. He had been given a hypodermic of one-sixth grain (11 mg) of morphine about one hour before admission. The picture was one of intense agony, the patient complaining of terrific pain in the abdomen and back, the hips and both thighs. The abdomen presented an intense boardlike rigidity. The temperature was 98 F, the pulse 90. The urine showed a trace of albumin. The leukocyte count was 8,000, the blood pressure 140 systolic, 90 diastolic. The pain was so intense that the statements of the patient were decidedly incoherent. A bite could not be discovered. About two hours after admission the temperature rose to 100 F, descending to normal in about six hours and remaining normal for the following twenty-four hours. On the third day the temperature again rose to 100 F but subsided within a few hours. The patient was given four doses of one-sixth grain of morphine over a period of about six hours before any relief was obtained. His complaint of intense agony was continuous, and it was difficult to keep him in bed. The abdominal pain was markedly paroxysmal. There was no vomiting at any time. The patient gradually improved and at the end of seventy-two hours had entirely recovered, except for some muscular soreness. I believe that a picture such as the one presented, closely simulating the intense, agonizing pain frequently encountered in perforated gastric or duodenal ulcers, can easily lead to serious mistakes in diagnosis and to the performance of abdominal exploration. Differentiation should be comparatively easy in most instances if one is informed and familiar with spider poisoning and considers the intense cramplike pains practically always encountered in the extremities and the back, as well as a history of possible spider bite, and not infrequently is able to locate a small punctate indurated area at a point at which the bite was received. None of the patients in this series have been operated on and all have recovered in periods varying from twenty-four to seventy-two hours. The leukocyte count has varied from a high of 26,000 to a low of 6,000, with an average of 11,000.

### Acute Extradural Abscess with Compression of Cord

DR GEORGE H. BUNCE, Columbus, Ga. Acute extradural abscess is not as rare as has been supposed. Accumulating experience proves that it is a recognizable clinical entity. The only effective treatment is laminectomy with dependent drainage of the abscess. Cases without complication, if operation is performed early, show less mortality than has hitherto been reported.

### The Endocrine Influence in Prostatic Hypertrophy

DR WILLIAM E. LOWER, Cleveland. Having demonstrated experimentally and clinically the effect of putting the interstitial cells of the testicles out of commission, I have tried methods other than castration for accomplishing the same results. I have shown experimentally that the results of castration can be obtained by ischemia, that is, by depriving the testicle of its main blood supply. I decided to try this clinically. The main artery to the testicle is the internal spermatic, a branch of the aorta, which is given off just below the renal vessels. The other arteries supplying the testicle are the external spermatic, a branch of the inferior epigastric, and the deferential, which follows the vas closely. In a limited number of clinical cases I have tried this procedure and a marked diminution in the size of the prostate has been noticed. The series, however, is too small to permit any conclusions to be drawn. I believe that in the rather large, soft glands a very definite reduction in the size of the gland may be expected from reducing the blood supply to the testes and thereby controlling the endocrine influence. In doing herniorrhaphies for direct inguinal hernias, I have repeatedly divided this entire cord and atrophy of the testicle on that side followed in course of time, but in no instance was there sloughing. I decided to try this procedure clinically in cases of prostatic enlargement. In a limited number of cases, I have divided the entire cord. In two instances sloughing followed, and I had to remove one testicle in one case and both in another. Since then I have divided only the internal spermatic and deferential arteries with the vas. No sloughing has followed.

## Current Medical Literature

## AMERICAN

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Titles marked with an asterisk (\*) are abstracted below

## American Journal of Diseases of Children, Chicago

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- \*Leukocytic Response to Measles. B Benjamin and Sylvia M Ward, New York.—p. 921  
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 \*Antitoxin Content of Blood Serum of Children with Negative Reactions to Schick Test. C R Messeloff and M J Karsh New York—p. 999  
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 Histamine Test of Gastric Secretion with Particular Reference to Its Practicability in Childhood Preliminary Communication W J Siemsen Chicago—p. 1013  
 \*Ocular Torticollis in Children I M Levin, Chicago—p. 1026

**Leukocytic Response to Measles**—Benjamin and Ward present the results of a study of the leukocytic reactions in forty six patients with measles, including observations on twenty patients during the incubation period. They employed the supravital technic in making the counts, and in their analysis they used a table of normal values for each of the white cell elements during the different ages of childhood. During the incubation period of measles, variations in the numbers of leukocytes were relatively slight. On the first day of the prodromal stage the leukocytic picture underwent a striking alteration manifested principally by a fall in the number of lymphocytes. At the height of the disease, all of the cell elements contribute to the production of leukopenia. Histologic changes observed in lymph nodes obtained from one of the patients indicated that the development of the lymphopenia in measles is coincident with marked hyperplasia of the lymphoid tissues. Nevertheless, the young lymphocytes in the glands did not appear in great numbers in the blood stream until the beginning of convalescence. The authors direct attention to the possibility that the blood picture may be suggestive of measles at a time when fever is the only apparent clinical abnormality.

**Sore Throat Due to Streptococcus Epidemicus**—Pilot and Rosenblum made a bacteriologic study of the infections of the throat in children during the winter and spring of 1931, from January to May. They found that 9 of 102 children with sore throat yielded Streptococcus epidemicus, 50 others yielded ordinary hemolytic streptococci. The sore throat due to S epidemicus was sporadic and not related to the supply of milk. The clinical picture of the patients with tonsillitis due to S epidemicus was similar at the onset to that of the patients with ordinary hemolytic streptococcus infections, but complications and sequelae were more common in the former. The greater frequency of complications may be due to the capsules and the mucoid character of S epidemicus, properties that have been associated with added virulence and aggressiveness.

**Antitoxin Content of Blood**—Messeloff and Karsh titrated the blood of fifty-one children with negative reactions to the Schick test for the antitoxic content. Forty-eight or 94 per cent had at least  $\frac{1}{30}$  unit of antitoxin in each cubic centimeter of blood serum. In one case the value was between  $\frac{1}{10}$  and  $\frac{1}{100}$ , and in two other cases, between  $\frac{1}{30}$  and  $\frac{1}{50}$  unit per cubic centimeter of serum. In no instance did they find a child with a negative reaction to the Schick test with no antitoxin in the blood. They believe that reported discrepancies such as finding persons with negative reactions to the Schick test with little or no antitoxin in the blood can in all probability be ascribed to the use of a toxin of questionable potency.

A standardized, potent toxin is essential for obtaining consistently correct results. Occasionally, a reaction to the Schick test will be positive within from twenty-four to forty-eight hours but will become negative thereafter. This type of reaction is found in persons having less than the usual  $\frac{1}{30}$  unit of antitoxin per cubic centimeter of serum. From the point of view of immunity to diphtheria, such persons are of no practical importance, since they possess an efficient barrier against the development of clinical diphtheria. They conclude that the Schick test, correctly performed, is a practical and reliable indicator of the presence of diphtheria antitoxin in the blood in an amount sufficient to protect the individual against clinical diphtheria.

**Histamine Test of Gastric Secretion**—Siemsen presents the results of extragastric reactions with varying doses of histamine in three subjects, and the results of fractional gastric analysis and the results of single aspiration tests in twenty children. From a study of the results the author concludes that the gastric response to histamine varies with the size of the dose. For comparative results, similar doses must be employed. The optimal dosage for children apparently lies between 0.005 and 0.01 mg per kilogram. Fractional analysis by the histamine method is feasible and practicable in childhood. The single aspiration test is distinctly advantageous for practical clinical purposes.

**Ocular Torticollis**—Levin reviews the literature and reports the histories of six patients with ocular torticollis to emphasize its importance in pediatric medicine. Recognition of the possible relationship of torticollis to ocular defects will spare children unnecessary operations, prolonged immobilization and other orthopedic measures. Correction of the ocular defect is at the same time the cure of the torticollis. When ocular torticollis is allowed to go uncorrected, the patient ultimately learns to ignore the image of the paralyzed eye and binocular single vision is lost, unocular vision remaining, with amblyopia of the involved eye. Prolonged tilting of the head finally results in changes in the cervical musculature and spine, and asymmetry of the face and even of the skull. Treatment should be carried out by a competent ophthalmologist. The usual procedure is to produce a defect in motility in the sound eye which is similar to the defect in the paralyzed eye, so that equilibrium may be restored in the two eyes. This is effected by a backward insertion of the associate muscle of the sound eye (in paralysis of the superior oblique, operation on the inferior rectus of the nonparalyzed eye). This procedure results in the corresponding meridians of the retinas of the eyes becoming parallel again, with disappearance of vertical diplopia. Proper refraction is essential. Orthopedic measures and corrective exercises should be employed, when it is deemed necessary, following treatment of the eyes.

## American Journal of Public Health, New York

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 Relapsing Fever in California G S Porter M Dorothy Beck and I M Stevens San Francisco—p. 1136  
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 Accurate Method of Reading the Kahn Reaction K C Read, Jr Fort Smith, Ark.—p. 1177

**Oysters and Anemia**—In their report on oysters in anemia, Coulson and his associates show that the oyster is excelled only by liver in the amounts of iron and copper which it may furnish to the diet in an average serving. That these metals are easily available for hemoglobin production has been shown in previous work in which it was found that oysters, oyster ash (acid soluble) and a solution of iron, copper and manganese in the same quantities, fed to anemic rats, brought about hemoglobin regeneration at the same rate in all three cases. Oysters should therefore be efficacious in the treatment or prevention of those types of secondary anemia which respond to treatment with iron or iron and copper. There is increasing support for the view that dietary deficiencies can best be corrected by proper selection of foods rather than by the use of artificial concen-

trates or medicinal mixtures. In order to insure an adequate supply of the inorganic constituents for hemoglobin production it would seem a wise plan to include oysters in the diet of the pernicious anemia patient, in conjunction with liver extract, since it is known that liver extract is relatively low in iron. An average serving of oysters (110 Gm) would furnish about 2 per cent of the human calory requirement (3,000 calories) and yield about 41 per cent of the daily dietary standard for iron, stated by Sherman to be about 15 mg.

**Toxin-Antitoxin and Schick Test**—The results of a Schick survey of the resident population at the Michigan Home and Training School at Lapeer are presented by Young and Cummings for 1920 for periods ranging from 1895 to 1920. The survey included 1,006 members of the 1920 population resident for eleven years thereafter, and the population of the institution in 1928 and 1931. The 1920 population was 151 per cent positive and the 1,006 patients of the same population, resident during the eleven years thereafter, were 15 per cent positive in 1920, 1 per cent positive in 1921 after treatment with toxin-antitoxin mixture, and 153 per cent positive in 1931. True or subclinical diphtheria was present as an influence on immunity before 1920 and was absent thereafter. The Schick tests done on the 1,006 patients resident at the time of the 1920 survey and during eleven years thereafter indicate that the span of artificially produced immunity runs close to seven years and that both artificially produced negatives and natural negatives tend to become positive over a given period of time.

### Annals of Medical History, New York

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### Archives of Internal Medicine, Chicago

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\*Liver Function in Hyperthyroidism S. S. Lichtman, New York—p. 721  
\*Branch Arborization and Complete Heart Block S. R. Rosenthal, Chicago—p. 730  
Stenosis of Superior Vena Cava Due to Mediastinal Tuberculosis G. Milles, Chicago—p. 759  
Combined Actions of Quinidine and Digitalis on Heart Experimental Study H. Gold, W. Modell and L. Price, New York—p. 766

**Effect of Digitalis on Coronary Flow**—In a series of experiments on dogs, Gilbert and Fenn found that digitalis has an effect that decreases the coronary flow. This decrease was observed under conditions of pulse rate and blood pressure that would normally tend to increase the volume of coronary flow. There was a decrease in coronary flow in part of the cases in which the blood pressure and the pulse rate fell. They do not expect such a vasoconstrictor action to be present in all experimental cases or in all clinical cases. Such an action is not to the biologic advantage of the animal, and it is offset by some protective reflex mechanism. Green and others have stressed the ease with which vasodilator effects may be obtained by nerve stimulation and the difficulty with which vasoconstrictor effects on the coronary arteries are obtained. Angina pectoris includes a large group of cases in which it is probable that vasoconstriction of the coronary arteries occurs as a result of reflexes originating in various sources. Such a reflex vasoconstriction is not to the advantage of the patient and does not occur with a normally acting autonomic system but in persons whose autonomic systems show lowered thresholds and are overlabile. It is in such a group that one would expect a vasoconstrictor action from digitalis to occur on the coronary

arteries most readily. In a large series of clinical cases, as in a large series of experimental animals, digitalis in comparable doses showed a wide divergence of action. The different physiologic effects did not always appear in the normal sequence or with the same percentage of the lethal dose, or the one or the other action may not appear at all. The physiologic effect is probably not a simple function but is conditioned by a great many anatomic and biochemical factors with which the authors are not as yet familiar. The coronary flow is also a function of many variable factors, and the effect of one isolated factor cannot be predicted. While a vasoconstrictor action cannot be predicted in any case, there is enough evidence of the presence of such an action to warrant a great deal of caution in the use of digitalis in coronary disease.

**Congestive Heart Failure**—Harrison and his associates draw the following conclusions from their observations concerning the mechanism of the production, in persons with cardiac disease, of dyspnea on mild exertion. 1 A decrease in vital capacity is important in two respects: alone it lowers the respiratory reserve and thereby predisposes to dyspnea, and it increases the resting ventilation through vagal reflexes from the lungs and hence lowers the respiratory reserve still further. 2 Afferent impulses from the moving muscles are a factor in the production of dyspnea because they cause reflex increase of the ventilation during the exertion. 3 Reflex stimulation of respiration, because of increased pressure in the right side of the heart and in the cardiac ends of the great veins, is of especial importance. (1) In some cases, venous pressure is higher than normal at rest and this increases the resting ventilation, (2) venous pressure rises more than normally during exertion and hence the patient with cardiac disease has greater than normal ventilation during exertion, and (3) the venous pressure, in contrast to its behavior in normal subjects, remains elevated after exertion, and therefore the ventilation in patients with cardiac disease also remains elevated longer than normal after the cessation of exercise. 4 All these factors so operate as to increase the value of the quotient ventilation divided by vital capacity, which is a measure of subjective respiratory distress in persons with cardiac disease. 5 These data constitute additional evidence against the validity of the widely accepted but erroneous theory that the symptoms of cardiac failure are essentially and primarily due to a diminution in the minute output of the heart.

**Liver Function in Hyperthyroidism**—Lichtman demonstrated a disturbance in the oxidation of cinchophen in sixteen of twenty cases of uncomplicated hyperthyroidism. Thirteen of the cases showed an increased excretion of oxy-cinchophen in the urine up to 150 mg daily. Larger amounts, between 150 and 200 mg, or from 31 to 42 per cent of the standard test dose, were excreted in the remaining three cases. On the basis of his previous experience, he believes that this indicates moderate impairment of the capacity of the liver cell to oxidize this substance further. In no instance was severe impairment of the hepatic function noted. There was no apparent relationship between the degree of functional impairment of the liver and the basal metabolic rate, the known duration of the disease or the percentage of weight lost. The constancy of depletion of glycogen in the liver cells in animals that have been fed thyroid substance and probably in clinical thyrotoxicosis suggests that the disturbance in oxidation of cinchophen is related to the capacity of the cells to store and mobilize glycogen. The galactose tolerance test gave no indication of a disturbance of hepatic function. There was little evidence of appreciable disturbance of the excretory functions of the liver as determined by studies on the icterus index, bilirubinemia, urobilinuria and urobilinogenuria.

**Branch Arborization and Heart Block**—Rosenthal reviews the literature and presents the various processes producing heart block in five patients. He states that arborization block alone cannot be considered as a distinct entity and when present is associated with an interruption of one or both of the main branches of the bundle. Coronary sclerosis with infarction of the interventricular septum or chronic myocarditis with marked scarring may produce arborization block. Acute inflammations will not produce an arborization block, because the destruction of the arborizations is probably not complete. Acute or subacute myocarditis may lead to heart block by invasion of the atrioventricular node, the bundle of His or its branches. The author found endocarditic lesions in two cases.

of myocarditis reported by him, one being microscopic and the other focal and small. Because of the cases reported in the literature as myocarditis of unknown origin, in which few or no microscopic studies were made, he suggests that the endocarditic lesions may have been microscopic and overlooked. In a case of essential hypertension with heart block, the mechanism by which the degenerative changes took place in the bundle of His is explained by an increased tonicity of the small arteries and the arterioles and prestasis and stasis in the precapillaries and capillaries.

### California and Western Medicine, San Francisco

37 289 360 (Nov) 1932

- Pharmacology of Bismuth Compounds in Treatment of Syphilis A Summary P J Hanzlik, San Francisco.—p 289  
Pulmonary Tuberculosis Its Dietary Treatment A Controlled Clinical Investigation E. Bogen and W. Rachmel Olive View.—p 292  
Rupture of Ureter Medical Problem Report of Cases M B Wesson, San Francisco.—p 296  
Gallbladder Surgery A. Weeks and G D Delprat, San Francisco.—p 303  
Malignancy A Group Problem. J D Lawson, Woodland.—p 307

**Rupture of Ureter**—Wesson found, in an experimental study of kidneys and ureters removed *en masse* with the bladder, obtained at necropsy, that the wall of a normal ureter cannot be punctured by a catheter, and it is doubtful whether a diseased ureter can be perforated unless a deep ulcer is present. The technic he used was first to fill the bladder with water, introduce the cystoscope and catheterize the ureters. The catheters used ranged in size from number 5 probe point to number 11 Blasucci. The injections were made with a 135 per cent solution of sodium iodide, and 10-inch gravity pressure overinjected in some cases. Syringe injections were used in an attempt to produce tears by pressure. In all cases, after the tip of the catheter had encountered resistance in the kidney or obstructions in the ureter, and force was used, the catheters buckled in the bladder. The bladders were then opened and the tissue adjacent to the ureteral orifices firmly clamped with artery forceps, the catheters were held close so that they could not bend outside of the ureter, and the author attempted to perforate the ureter or kidney, using all the force available in his fingers. By means of pins on a board, sharp hooks were made in the ureters and complete occlusion of the lumen was obtained by means of string, or by tying the ureter itself into a tight knot. Again, several catheters were passed into a ureter in order to encourage the presentation of a tip against the wall at an unusual angle. After the tip was caught, there was no further advance of the point no matter how great the amount of pressure used. Artificial strictures in the ureters and stiff catheters resulted in damaged tips or ureteral coils. On three occasions sharp tipped catheters were forced through the kidney parenchyma, but the capsule could not be pierced. Syringe pressure injection of sodium iodide solution, followed by air, brought about partial decapsulation, but there was no rupture. In one case a tight knot was tied in the ureter, the sides of the meatus were seized with clamps and a number 5 bougie was introduced with such force as to break the bougie up, but the ureter held. A number 11 bougie was then tried. It was so large that it could not bend, two assistants with four artery clamps held the mouth of the ureter and sufficient pressure was used to tear the ureter away from the clamps, but eventually the clamps held and the knot was avulsed. Such force of course, could not be applied to a living subject, as the bougie would buckle in the bladder. Stones by means of pressure necrosis produce leaks or openings through which the stones fall and the resultant perinephric abscess may drain into the ureter, the intestine or on the external surface.

**Gallbladder Surgery**—Weeks and Delprat analyze 100 selected cases of gallbladder disease in which they operated. They consider that operations on the gallbladder, whether simple drainage or complete extirpation, with proper consideration of preoperative care and of the time when the patient is operated on, are safe procedures, with low mortality, and that a high percentage of cured and thankful patients may be expected. They conclude that one must be sure that one's patient is in the best possible surgical condition by having recourse to the excellent laboratory facilities which are now available. The roe bengal test can now be used as a routine procedure to make certain that a reasonably normal liver function is present. This knowledge is of especial value in gall-

bladder surgery. The laboratory tests will reveal acute stages of bile tract inflammation, in which surgery is inadvisable. Sugar and fruit juices should be forced before any major operation. The simplest amount of surgery in the shortest space of time, consistent with proper work, should be done. When in doubt the gallbladder should be drained, because the less extensive the surgery the less the risk to the patient. A surprisingly large number of drained gallbladders never require further surgical procedures.

### Medical Journal and Record, New York

136 353 396 (Nov 2) 1932

- Tender Areas in Visceral Diseases S P Sobel New York.—p 353  
Drinking Water E E Cornwall Brooklyn.—p 357  
Appendectomy J W Winston Norfolk, Va.—p 359  
Treatment of Rheumatic Affections H S Davidson and C Hyman Atlantic City, N J.—p 360  
Vertebral Arthritis W J Moore and D Kyle Glasgow Scotland.—p 364

### Military Surgeon, Washington, D C

71 387-472 (Nov) 1932

- Inferiority Complex in Military Service B F Duckwall.—p 387  
Suicide Social Forensic and Psychologic Aspects. C R Bell.—p 399  
The Main Factor Leading to High Hospital Cost. M. W. Hall.—p 404  
Epidemic of Influenza on Shipboard and in Hawaiian Islands, in 1920 L B Bibb.—p 413  
Medical Supervision of Equestrian Events in Tenth Olympiad. P Goldberg.—p 418  
The Medical Division Army Air Corps G I Jones.—p 422  
Meeting of Permanent Committee of International Congress of Military Medicine and Pharmacy W S Bainbridge.—p 428

### Nebraska State Medical Journal, Lincoln

17 465 504 (Nov) 1932

- \*Peptic Ulcer Syndrome Without Ulcer A. B. Rivers and Frances R Vanzant Rochester Minn.—p 465  
Restoration of Paralytic Deformities and Disabilities of Lower Extremities J P Lord Omaha.—p 468  
Prognosis in Surgery of Abdomen Acute Appendix J E Summers, Omaha.—p 473  
\*Diseases of Thyroid Gland. B B Davis Omaha.—p 477  
Purpura A S Rubnitz Omaha.—p 482  
Hyperthyroidism and Neurasthenia W J Arrasmith, Grand Island.—p 486  
Osteomyelitis of Skull C G Moore Fremont.—p 489

**Peptic Ulcer Syndrome Without Ulcer**—According to Rivers and Vanzant, there seems no doubt that the syndrome usually accepted as diagnostic of peptic ulcer can be produced by factors other than peptic ulcer. The ulcer-like syndrome usually occurs in the nervous, high-strung, intensive person and is particularly likely to be established during periods of fatigue and tension. Because peptic ulcer also is frequently seen in similar cases, because reactivation of the ulcer frequently takes place following a period of stress, fatigue and tension, and because fluctuating psychophysiologic factors seem capable of preventing the cessation of the ulcer syndrome, it is suggested that factors which have their inception in derangement of the nervous system must be significant in the cause and course of the ulcer type of syndrome, whether or not ulcer is present. It is well to remember nervous factors in considering the treatment of patients having ulcer-like syndromes. In certain instances, to relieve the syndrome permanently, it is only necessary to readjust the patient's activities and to advise more rest and relaxation. In cases of peptic ulcer, the remembrance of this factor and the direction of some therapeutic measures toward relief make the symptoms much easier to control and undoubtedly influence the course of the disease favorably.

**Diseases of Thyroid**—Davis states that the best brief statement of the physiology of the thyroid he has encountered is that of Marine, which is as follows: "The major function of the thyroid is to provide the means through its iodine containing hormone, thyroxine, for maintaining a higher rate of metabolism or oxidation processes than would otherwise exist, and also through fluctuations of activity, it provides the means for varying the rate of metabolism to meet changing physiologic needs." Almost every pathologic change in the thyroid is produced by an urge for more thyroxine. This may be due to an actual or relative iodine deficiency. Hypertrophy and hyperplasia are not due to multiplication of follicles but to the bringing to maturity of a large number of small undeveloped follicles. Every active hyperplasia is marked by the disappearance of colloid within the follicles and a heaping up of new and larger epithelial cells within the follicle. Hyper-

**Journal of Physiology, London**

76 395 494 (Nov 18) 1932

- \*Behavior of Liver Glycogen in Experimental Animals IV Effect of Some Anesthetics G E. Murphy and F G Young—p 395  
 Id V Some Factors Affecting Liver Glycogen Recovery in Decapitate Cat C L Evans, G E. Murphy and F G Young—p 413  
 \*Effect of Some Accidental Lesions on Size of Spleen J Barcroft—p 436  
 Alterations in Size of Denervated Spleen Related to Pregnancy J Barcroft—p 443  
 Volume of Blood in Uterus During Pregnancy J Barcroft and P Rothschild—p 447  
 Observations on Proximal Portion of Exteriorized Colon J Barcroft and F R Steggerda—p 460  
 Optimum Temperature for Investigations on Frog's Circulation E M Scarborough—p 472  
 \*Effect of Lactic Acid in Nerve Activity T P Feng—p 477

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**Lactic Acid and Nerve Activity.**—Feng describes experiments in which he demonstrated that the frog's nerve is definitely poisoned by soaking in from 0.37 to 0.4 per cent solution of iodoacetic acid for two hours or longer. The poisonous effect shows itself in the inability of such nerve to endure prolonged activity in oxygen. Such nerve is also much more readily asphyxiated in nitrogen than normal. Giving sodium lactate to poisoned nerve improves its capacity for prolonged activity in air or in oxygen, in nitrogen the time to complete asphyxiation, with or without continuous stimulation, does not seem to be lengthened by the presence of lactate, except occasionally and slightly. On readmission of oxygen, the superiority of the poisoned nerve containing lactate again manifests itself in its quicker and greater recovery. These results indicate that the frog's nerve is capable of utilizing lactic acid by oxidation and that the formation of lactic acid, though not essential to nerve conduction, enables the normal nerve to perform long hours of continuous function.

**Journal of State Medicine, London**

40 621 682 (Nov) 1932

- Comparison of Properties of Certain Tissue Extracts Having Depressor Effects R H Major, J B Nanninga and C J Weber—p 487  
 The Lure of Vital Statistics T H C Stevenson—p 621  
 The Sanitary Evolution of Belfast J D Williamson—p 628  
 Brucella Abortus Infection in Ireland J W Bigger—p 642  
 Abortus Fever in Northern Ireland J S Baxter—p 648  
 Some Observations on Brucella Abortus Infection in Northern Ireland G F W Tinsdale—p 653  
 Infection with Brucella Abortus in the Irish Free State W P O'Callaghan—p 659  
 Infectious Abortion in Cattle H G Lamont—p 667  
 \*Occurrence, Distribution and Specificity of Agglutinins for Brucella Abortus in Human Serums J D A. Gray—p 673

**Specificity of Agglutinins for Brucella Abortus.**—According to Gray, the agglutinating effects of apparently normal serums for brucellar suspensions bear no obvious relationship to the results of the Wassermann test or the previous administration of a TAB vaccine. An unusually large percentage of the women with serums possessing such agglutinating effects gave histories of previous abortions. A high ratio of the titer of the carbonic acid soluble fraction of the serum to that of the insoluble fraction is characteristic of the serums of infected human beings and recently immunized rabbits, but

it rapidly falls with the lapse of time. After a study of serums selected for their high titers from Wassermann serums, the author makes the suggestion that this high ratio (ten or over) may be of value in identifying present or recent infections in which the titer of the whole serum remains persistently low. The titer of an individual serum for brucellar suspensions may rise rapidly during an attack of gonorrhea, but serums giving negative results at the onset of the attack were found to remain negative throughout.

**Lancet, London**

2 983 1038 (Nov 5) 1932

- \*Upper Urinary Tract in Pregnancy D Baird—p. 983  
 High Carbohydrate Diet in Treatment of Diabetes Mellitus G Graham, A Clark and H E W Robertson—p 990  
 \*Sympathetic Control of Tissue Change and Its Surgical Significance. R C Shaw—p 993  
 Actuation of Inert Diaphragm by Gravity Method F C Eve—p 995  
 Fatal Poliomyelitis in Adults Case Reports H G Garland and F F Hellier—p 997

**Upper Urinary Tract in Pregnancy.**—From an investigation of the various complications in 1,000 consecutive cases admitted to the Glasgow Royal Maternity Hospital, Baird concludes that pregnant women show varying degrees of atony of the upper urinary tract. In some this is slight, so that no appreciable stasis is produced. In others it is marked and can be shown to occur at the beginning of pregnancy. In the second half of pregnancy, dilatation and stasis frequently result and are due to pressure of the uterus on the atonic ureters at the pelvic brim. Dilatation and stasis from the pelvic brim upward can be produced in the nonpregnant by ovarian cysts. In these the dilatation is less and there is an absence of the marked elongation and kinking of the ureter that is characteristic of pregnancy, even though the pressure exerted by the cyst may be greater than could possibly be exerted by the pregnant uterus. The atony peculiar to pregnancy is therefore the primary factor. In normal pregnancy the tone of the ureters has been shown to improve near term, and in cases of albuminuric toxemia there is a minimum of atony and stasis. In both instances, the author believes, there is an excess of posterior pituitary hormone in the blood. The primary factor in the production of the changes in the upper urinary tract in pregnancy is probably, therefore, a disturbance of the endocrines. Infection of the urinary tract is common during pregnancy and is often unrecognized. Infection is always preceded by stasis and seldom clears up completely until the stasis is relieved by termination of the pregnancy. Early diagnosis is most important, as, if instituted early, simple treatment by abundant fluids and alkalis is sufficient to enable the patient to go to term. Ureteral catheterization has a definite place in the treatment of serious cases for the relief of pain and the promotion of drainage.

**Sympathetic Control of Tissue Change.**—According to Shaw's observations, the sympathetic nerve control of the tissue cells is normally of the nature of a brake, preventing irregular and uneconomic proliferation. In this respect its activity may be compared to its inhibitory influence on the sensory threshold and the production of the brake phenomenon in muscle tissue. Certain nonspecific irritants act on the autonomic nerve mechanism, associated with the dermis and epidermis, and produce a definite sequence of pathologic changes characterized primarily by hyperplasia of fibrous elastic and epithelial tissue cells. The author suggests that the derangement of the sympathetic hormonal apparatus determines the initial development of neoplasms. The surgical removal of the sympathetic nerve supply acts essentially through extirpation of those factors that disturb the physiochemical balance of the tissue cells, and the passive effects of vasodilatation are of a secondary importance.

**Medical Journal of Australia, Sydney**

2 647 676 (Nov 26) 1932

- The Delinquent Child J W K Bruce—p 647  
 Environment and Hysteria J A McGeorge—p 655  
 Fracture of Clavicle H R Scrivener—p 660

**South African Medical Journal, Cape Town**

6 715 754 (Nov 26) 1932

- Medical Evidence. H de Villiers—p 717  
 Prevalence of Certain Diseases Among Natives of Ciskei N MacVicar—p 721  
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53 801-816 (Dec. 18) 1932

- Syndrome of Exophthalmic Goiter After Thyroid Treatment G Jeanneney —p. 807
- Unilateral Exophthalmos on Same Side as Unilateral Goiter Two Cases G Jeanneney —p. 808
- Contraction of Abdominal Wall in Course of Trauma of Dorsolumbar Spine. Begouin and Magendie —p. 809

**Unilateral Exophthalmos and Unilateral Goiter**—Jeanneney reports two cases of rapidly appearing goiter with unilateral predominance accompanied by an exophthalmos on the side of the thyroid hypertrophy. He thinks that the intraglandular stimulation of the sympathetic, more marked on the side of the goiter, gave rise in these cases to a unilateral exophthalmos. Cases of unilateral exophthalmos are not exceptional. Worms and Hamant opine that the appearance of a unilateral exophthalmos on the same side as a unilateral goiter is a coincidence, whereas Kocher, Muller and others think that this is the general rule. The author agrees that there is a great deal of truth in the latter hypothesis, following a hemithyroidectomy he has observed a unilateral regression of the exophthalmos on the same side. He thinks it will be interesting to see whether in the two cases reported unilateral intervention will dispel the unilateral exophthalmos.

## Paris Medical

2: 497 512 (Dec. 10) 1932

- Hemophilic Arthropathies A. Le Marchadour and A. Breton —p. 497
- Blood Transfusion in Course of Grave Typhoid. J. Bourgeois and A. Maisler —p. 504
- Paroxysmal Tachycardia Case. J. Albert Weil and L. Misermont. —p. 509
- Sprain of Internal Lateral Ligament of Instep A. Schwartz —p. 511

**Hemophilic Arthropathies**—In connection with the report of three brothers with hemophilic arthropathy, Le Marchadour and Breton say that hemophilic arthropathies usually occur in children. They affect chiefly the large joints of the extremities and, above all, the knee. The arthropathy starts with a simple hemarthrosis occurring suddenly without apparent cause. The joint becomes swollen and painful, the skin is white and there is functional impotence. The acute symptoms pass in a few days, after eight days there is only some muscular atrophy and anesthesia of the nerves. As a rule these hemarthroses repeat themselves, gradually producing organic lesions of the synovial membrane, ligaments, bony surfaces and articular epiphyses and resulting in chronic arthritis. At this stage the aspect is that of a tuberculous process, there is no pain at pressure on the bony surfaces and no adenopathy of the groin. With little subacute attacks, characterized by increase in volume and functional impotence, the arthropathy evolves toward fibrous ankylosis. If the hemarthrosis is the first symptom of hemophilia, the diagnosis is often incorrect. Articular puncture is to be avoided because it is dangerous but examination of the blood and roentgenography facilitate the diagnosis. Roentgenographically the evolution of the hemophilic arthropathy appears as a general homogeneous decalcification with punctuated zones of rarefaction near the epiphyseal extremities, and linear densification of the osseous shell gradually shading into the interior of the bone. There is marked uniform articular constriction but the line of separation never disappears entirely. The articular segments are modified, there may be periarticular osteophytic production and subluxation. Fractures are easily produced as a result of the decalcification. In one of the cases reported there was a metaphyseal fracture. General treatment of the hemophilia in the form of serum therapy should be combined with local treatment of the arthropathy, consisting in absolute and prolonged rest. If deformity has already occurred, correction may be undertaken, but only with the greatest precautions because of the tendency to hemorrhage.

**Blood Transfusion in Severe Typhoid**.—Bourgeois and Maisler think that the value of blood transfusions in severe cases of typhoid depends not solely on the quantity of blood injected but also on the antitoxic properties of the transfused blood. In cases in which profuse hemorrhages occur, the substitution of blood by massive injection is of paramount importance, but in cases of ataxo-dynamic typhoid in which intervention is undertaken because of toxic symptoms, cyanosis, dyspnea and so on it is the transfer of antitoxin that is of chief importance. The sudden disappearance of

toxic symptoms, which has been observed following blood transfusions in ataxo-dynamic typhoid, indicates that a specific immunity is conferred, but the fact that the disease continues to evolve under an attenuated form and that recurrences are observed indicates that the immunity is antientdotoxic rather than antimicrobial. The author reports a case illustrating this mode of action of the transfusion. Experimentation has shown that typhoid endotoxin can be neutralized by human serum, but the serum of convalescent persons has a much higher anti-endotoxic value than that of normal or of vaccinated persons. To give the typhoid patient the best chances for recovery, one should select the donor whose plasma has the highest anti-endotoxic power. As the antitoxic power of convalescent serum varies considerably, the authors think that when precise laboratory data cannot be obtained it is best to utilize the blood of a donor who has recovered from an attack of typhoid of average intensity and sufficient prolongation to have acquired a substantial immunity, and of sufficiently recent date to have preserved the immune properties of his serum.

## Schweizerische medizinische Wochenschrift, Basel

62: 1149 1172 (Dec. 10) 1932

- Treatment of Acute and Chronic Suppuration of Middle Ear E. Schlittler —p. 1149
- Trauma and Orchiepididymitis M. Ganzoni —p. 1152
- Experimental Investigations on Modification of Blood Regeneration Female Sex Hormone. P. F. Nigst —p. 1156
- Digital Tendovaginitis M. Iselin —p. 1159
- Periphlebitis. Stotzer —p. 1163

**Treatment of Suppuration of Middle Ear**—Schlittler's report is based on the material of the Basel clinic during the six years from 1925 to 1930. In regard to the conservative treatment, he says that he employs boric acid irrigations and the ice bag. Paracentesis, which he considers also as a conservative measure, he thinks advisable in those cases in which, in spite of great pressure in the tympanic cavity (protruding tympanic membrane, severe pains), there is no spontaneous perforation. In discussing operative treatment, he first gives his attention to the chronic suppuration of the middle ear. He differentiates the chronic cases into two groups, the simple tympanic suppurations and the epitympanic suppurations that are usually complicated by cholesteatoma. He thinks an operative intervention necessary, as a rule, only if cholesteatoma is present, because endocranial complications are rare in the chronic tympanic suppurations. Operation is advisable if conservative treatment by means of the eustachian catheter is unsuccessful within four or six weeks, or if the suppuration relapses again and again, or if there are signs of an endocranial complication or the facial nerve has become paralyzed. Determination of the advisability of a surgical intervention is much more difficult in acute otitis than in chronic cases. The author states that 353, that is, 15.2 per cent, of 2,319 patients with acute otitis were operated on, whereas the other 848 cent recovered with the aid of conservative treatment. Otological statistical reports show a similar or even a smaller percentage of operative interventions. However, the author emphasizes that this low percentage should not lead to an undue postponement of an operative intervention, but that operative treatment should be resorted to as soon as there are signs of an endocranial complication. He thinks that mastoiditis as such does not necessitate an operation but that disintegration of the bone or bone abscess does. A tabular report indicates that, compared with older statistics, there was a considerable increase in the complications of acute otitis during recent years, whereas the percentage of complications in chronic cases remained about the same. Other tabular reports show the incidence of epidural abscess, a most frequent but not dangerous complication, the great increase in meningitis with fatal outcome after acute otitis, and the incidence and mortality of sinus phlebitis and of cerebral abscess. The author thinks that the considerable increase of acute otitis and particularly of its endocranial complications (epidural abscess and meningitis) may be due to the influenza epidemics of recent years.

**Trauma and Orchiepididymitis**—Ganzoni considers the relation between trauma and orchiepididymitis primarily from the point of view of medical jurisprudence with regard to the right to compensation. He discusses the direct injury of the testis and of the epididymis, the indirect injury that is produced by torsion of the spermatic cord, and the various forms







**Journal of Physiology, London**

76 395 494 (Nov 18) 1932

- \*Behavior of Liver Glycogen in Experimental Animals IV Effect of Some Anesthetics G E. Murphy and F G Young—p 395  
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**Journal of State Medicine, London**

40 621 682 (Nov) 1932

- Comparison of Properties of Certain Tissue Extracts Having Depressor Effects R H Major, J B Nanninga and C J Weber—p 487  
 The Lure of Vital Statistics T H C Stevenson—p 621  
 The Sanitary Evolution of Belfast J D Williamson—p 628  
 Brucella Abortus Infection in Ireland J W Bigger—p 642  
 Abortus Fever in Northern Ireland J S Baxter—p 648  
 Some Observations on Brucella Abortus Infection in Northern Ireland G F W Tinsdale—p 653  
 Infection with Brucella Abortus in the Irish Free State W P O'Callaghan—p 659  
 Infectious Abortion in Cattle H G Lamont—p 667  
 \*Occurrence, Distribution and Specificity of Agglutinins for Brucella Abortus in Human Serums J D A. Gray—p 673

**Specificity of Agglutinins for Brucella Abortus**—According to Gray, the agglutinating effects of apparently normal serums for brucellar suspensions bear no obvious relationship to the results of the Wassermann test or the previous administration of a TAB vaccine. An unusually large percentage of the women with serums possessing such agglutinating effects gave histories of previous abortions. A high ratio of the titer of the carbonic acid soluble fraction of the serum to that of the insoluble fraction is characteristic of the serums of infected human beings and recently immunized rabbits, but

it rapidly falls with the lapse of time. After a study of serums selected for their high titers from Wassermann serums, the author makes the suggestion that this high ratio (ten or over) may be of value in identifying present or recent infections in which the titer of the whole serum remains persistently low. The titer of an individual serum for brucellar suspensions may rise rapidly during an attack of gonorrhea, but serums giving negative results at the onset of the attack were found to remain negative throughout.

**Lancet, London**

2 983 1038 (Nov 5) 1932

- \*Upper Urinary Tract in Pregnancy D Baird—p 983  
 High Carbohydrate Diet in Treatment of Diabetes Mellitus G Graham, A Clark and H E W Robertson—p 990  
 \*Sympathetic Control of Tissue Change and Its Surgical Significance, R C Shaw—p 993  
 Actuation of Inert Diaphragm by Gravity Method F C Eve—p 995  
 Fatal Poliomyelitis in Adults Case Reports H G Garland and F F Helier—p 997

**Upper Urinary Tract in Pregnancy**—From an investigation of the various complications in 1,000 consecutive cases admitted to the Glasgow Royal Maternity Hospital, Baird concludes that pregnant women show varying degrees of atony of the upper urinary tract. In some this is slight, so that no appreciable stasis is produced. In others it is marked and can be shown to occur at the beginning of pregnancy. In the second half of pregnancy, dilatation and stasis frequently result and are due to pressure of the uterus on the atonic ureters at the pelvic brim. Dilatation and stasis from the pelvic brim upward can be produced in the nonpregnant by ovarian cysts. In these the dilatation is less and there is an absence of the marked elongation and kinking of the ureter that is characteristic of pregnancy, even though the pressure exerted by the cyst may be greater than could possibly be exerted by the pregnant uterus. The atony peculiar to pregnancy is therefore the primary factor. In normal pregnancy the tone of the ureters has been shown to improve near term, and in cases of albuminuric toxemia there is a minimum of atony and stasis. In both instances, the author believes, there is an excess of posterior pituitary hormone in the blood. The primary factor in the production of the changes in the upper urinary tract in pregnancy is probably, therefore, a disturbance of the endocrines. Infection of the urinary tract is common during pregnancy and is often unrecognized. Infection is always preceded by stasis and seldom clears up completely until the stasis is relieved by termination of the pregnancy. Early diagnosis is most important, as, if instituted early, simple treatment by abundant fluids and alkalis is sufficient to enable the patient to go to term. Ureteral catheterization has a definite place in the treatment of serious cases for the relief of pain and the promotion of drainage.

**Sympathetic Control of Tissue Change**—According to Shaw's observations, the sympathetic nerve control of the tissue cells is normally of the nature of a brake, preventing irregular and uneconomic proliferation. In this respect its activity may be compared to its inhibitory influence on the sensory threshold and the production of the brake phenomenon in muscle tissue. Certain nonspecific irritants act on the autonomic nerve mechanism, associated with the dermis and epidermis, and produce a definite sequence of pathologic changes characterized primarily by hyperplasia of fibrous elastic and epithelial tissue cells. The author suggests that the derangement of the sympathetic hormonal apparatus determines the initial development of neoplasms. The surgical removal of the sympathetic nerve supply acts essentially through extirpation of those factors that disturb the physiochemical balance of the tissue cells, and the passive effects of vasodilatation are of a secondary importance.

**Medical Journal of Australia, Sydney**

2 647 676 (Nov 26) 1932

- The Delinquent Child J W K Bruce—p 647  
 Environment and Hysteria J A McGeorge—p 655  
 Fracture of Clavicle H R Scrivener—p 660

**South African Medical Journal, Cape Town**

6 715 754 (Nov 26) 1932

- Medical Evidence. H de Villiers—p 717  
 Prevalence of Certain Diseases Among Natives of Ciskei N MacVicar—p 721  
 Chronic Gout I Frack—p 724

Gazette Hebdomadaire des Sciences Méd de Bordeaux  
53 801-816 (Dec. 18) 1932

- Syndrome of Exophthalmic Goiter After Thyroid Treatment. G Jeanneney —p 807  
\*Unilateral Exophthalmos on Same Side as Unilateral Goiter Two Cases. G Jeanneney —p 808.  
Contraction of Abdominal Wall in Course of Trauma of Dorsolumbar Spine. Beguin and Magendie —p 809

**Unilateral Exophthalmos and Unilateral Goiter**—Jeanneney reports two cases of rapidly appearing goiter with unilateral predominance accompanied by an exophthalmos on the side of the thyroid hypertrophy. He thinks that the intra-glandular stimulation of the sympathetic, more marked on the side of the goiter, gave rise in these cases to a unilateral exophthalmos. Cases of unilateral exophthalmos are not exceptional. Worms and Hamant opine that the appearance of a unilateral exophthalmos on the same side as a unilateral goiter is a coincidence, whereas Kocher, Muller and others think that this is the general rule. The author agrees that there is a great deal of truth in the latter hypothesis, following a hemithyroidectomy he has observed a unilateral regression of the exophthalmos on the same side. He thinks it will be interesting to see whether in the two cases reported unilateral intervention will dispel the unilateral exophthalmos.

Paris Médical

2 497 512 (Dec. 10) 1932

- \*Hemophilic Arthropathies. A. Le Marchadour and A. Breton.—p 497  
\*Blood Transfusion in Course of Grave Typhoid. J. Bourgeois and A. Maister.—p 504  
Paroxysmal Tachycardia Case. J. Albert Weil and L. Misermont.—p 509  
Sprain of Internal Lateral Ligament of Instep. A. Schwartz.—p 511

**Hemophilic Arthropathies**—In connection with the report of three brothers with hemophilic arthropathy, Le Marchadour and Breton say that hemophilic arthropathies usually occur in children. They affect chiefly the large joints of the extremities and, above all, the knee. The arthropathy starts with a simple hemarthrosis occurring suddenly without apparent cause. The joint becomes swollen and painful, the skin is white and there is functional impotence. The acute symptoms pass in a few days, after eight days there is only some muscular atrophy and anesthesia of the nerves. As a rule these hemarthroses repeat themselves, gradually producing organic lesions of the synovial membrane, ligaments, bony surfaces and articular epiphyses and resulting in chronic arthritis. At this stage the aspect is that of a tuberculous process, there is no pain at pressure on the bony surfaces and no adenopathy of the groin. With little subacute attacks, characterized by increase in volume and functional impotence, the arthropathy evolves toward fibrous ankylosis. If the hemarthrosis is the first symptom of hemophilia, the diagnosis is often incorrect. Articular puncture is to be avoided because it is dangerous but examination of the blood and roentgenography facilitate the diagnosis. Roentgenographically the evolution of the hemophilic arthropathy appears as a general homogeneous decalcification with punctuated zones of rarefaction near the epiphyseal extremities, and linear densification of the osseous shell gradually shading into the interior of the bone. There is marked uniform articular constriction but the line of separation never disappears entirely. The articular segments are modified, there may be periarticular osteophytic production and subluxation. Fractures are easily produced as a result of the decalcification. In one of the cases reported there was a metaphyseal fracture. General treatment of the hemophilia in the form of serum therapy should be combined with local treatment of the arthropathy consisting in absolute and prolonged rest. If deformity has already occurred, correction may be undertaken, but only with the greatest precautions because of the tendency to hemorrhage.

**Blood Transfusion in Severe Typhoid**—Bourgeois and Maister think that the value of blood transfusions in severe cases of typhoid depends not solely on the quantity of blood injected but also on the antitoxic properties of the transfused blood. In cases in which profuse hemorrhages occur, the restitution of blood by massive injection is of paramount importance but in cases of ataxo-dynamic typhoid in which intervention is undertaken because of toxic symptoms, the intervention is undertaken because of the transfer of antitoxin that is of chief importance. The sudden disappearance of

toxic symptoms, which has been observed following blood transfusions in ataxo-dynamic typhoid, indicates that a specific immunity is conferred, but the fact that the disease continues to evolve under an attenuated form and that recurrences are observed indicates that the immunity is antientotoxic rather than antimicrobial. The author reports a case illustrating this mode of action of the transfusion. Experimentation has shown that typhoid endotoxin can be neutralized by human serum, but the serum of convalescent persons has a much higher antientotoxic value than that of normal or of vaccinated persons. To give the typhoid patient the best chances for recovery, one should select the donor whose plasma has the highest antientoxic power. As the antitoxic power of convalescent serum varies considerably, the authors think that when precise laboratory data cannot be obtained it is best to utilize the blood of a donor who has recovered from an attack of typhoid of average intensity and sufficient prolongation to have acquired a substantial immunity, and of sufficiently recent date to have preserved the immune properties of his serum.

Schweizerische medizinische Wochenschrift, Basel

62: 1149 1172 (Dec. 10) 1932

- \*Treatment of Acute and Chronic Suppuration of Middle Ear. E. Schlittler.—p 1149  
\*Trauma and Orchiepididymitis. M. Ganzoni.—p 1152  
\*Experimental Investigations on Modification of Blood Regeneration. Female Sex Hormone. P. F. Nigst.—p 1156  
Digital Tendovaginitis. M. Iselin.—p 1159  
Periphlebitis. Stotzer.—p 1163

**Treatment of Suppuration of Middle Ear**—Schlittler's report is based on the material of the Basel clinic during the six years from 1925 to 1930. In regard to the conservative treatment, he says that he employs boric acid irrigations and the ice bag. Paracentesis, which he considers also as a conservative measure, he thinks advisable in those cases in which, in spite of great pressure in the tympanic cavity (protruding tympanic membrane, severe pains), there is no spontaneous perforation. In discussing operative treatment, he first gives his attention to the chronic suppuration of the middle ear. He differentiates the chronic cases into two groups, the simple tympanic suppurations and the epitympanic suppurations that are usually complicated by cholesteatoma. He thinks an operative intervention necessary, as a rule, only if cholesteatoma is present, because endocranial complications are rare in the chronic tympanic suppurations. Operation is advisable if conservative treatment by means of the eustachian catheter is successful within four or six weeks, or if the suppuration relapses again and again, or if there are signs of an endocranial complication or the facial nerve has become paralyzed. Determination of the advisability of a surgical intervention is much more difficult in acute otitis than in chronic cases. The author states that 353, that is, 15.2 per cent, of 2,319 patients with acute otitis were operated on, whereas the other 84.8 per cent recovered with the aid of conservative treatment. Otological statistical reports show a similar or even a smaller percentage of operative interventions. However, the author emphasizes that this low percentage should not lead to an undue postponement of an operative intervention, but that operative treatment should be resorted to as soon as there are signs of an endocranial complication. He thinks that mastoiditis as such does not necessitate an operation but that disintegration of the bone or bone abscess does. A tabular report indicates that, compared with older statistics, there was a considerable increase in the complications of acute otitis during recent years, whereas the percentage of complications in chronic cases remained about the same. Other tabular reports show the incidence of epidural abscess, a most frequent but not dangerous complication, the great increase in meningitis with fatal outcome after acute otitis, and the incidence and mortality of sinus phlebitis and of cerebral abscess. The author thinks that the considerable increase of acute otitis and particularly of its endocranial complications (epidural abscess and meningitis) may be due to the influenza epidemics of recent years.

**Trauma and Orchiepididymitis**—Ganzoni considers the relation between trauma and orchiepididymitis primarily from the point of view of medical jurisprudence with regard to the right to compensation. He discusses the direct injury or the testis and of the epididymis, the indirect injury that is produced by torsion of the spermatic cord, and the various forms

0.6 mg of dextrose, pipetted into a similar tube. To each tube is now added 1 cc of 20 per cent sodium carbonate, and the carbonate is mixed with the trinitrophenol solution. The tubes are next placed in a beaker of boiling water for fifteen minutes and then cooled. When cool, the standard is diluted to 10 cc and the unknown to some known volume (10, 15, 20 cc and so on) approximating the color of the standard. If the standard is set at 10 mm in the colorimeter, the dilution of the unknown times 10, divided by the reading of the unknown, will give the blood sugar in milligrams per hundred cubic centimeters.

As Somogyi has shown (*J Biol Chem* 83 157 [July] 1929), true figures for the blood sugar may be obtained with the Folin-Wu method after zinc precipitation. Myers and Root (*J Lab & Clin Med* 16 890 [June] 1931) have similarly shown that zinc will remove the non-sugar reducing substances in the trinitrophenol method. However, if one is going to this trouble it is better to use one of the copper methods.

If one desires to make analyses on finger blood, the Folin micro method is probably the most satisfactory. (For 0.1 cc of blood see Folin and Malmros, *J Biol Chem* 83 115 [July] 1929. Folin and Svedberg, *ibid* 88 85 [Aug] 1930. For 0.025 cc see Jeghers and Myers, *J Lab & Clin Med* 15 982 [July] 1930.) The method is considerably more complicated than the trinitrophenol method.

#### WORMS IN BURIED BODIES

*To the Editor*—I have a patient who works in a cemetery as a grave digger. In the course of his work he has helped exhume many bodies which had been buried from three weeks to fifty years. He tells me that it is no literary myth that 'worms' attack the bodies of a large percentage of those buried. He mentioned seeing maggot-like worms on the face of a corpse that had been buried only three weeks, in which case both the outer box and the coffin were in good condition. He mentioned having seen many bodies that had been buried for fifteen or twenty years in which the coffin had decayed, allowing the earth to come in contact with the remains, which "were alive with worms." While perhaps this is not strictly a medical query, I should like to know how authentic these statements are, the zoological classification of these "worms," where they come from and how they get there. Please omit name.

M D, Texas

*ANSWER*—Generally speaking, the statements of the grave digger are in accord with the facts. Maggots may make their appearance on the cadaver a few hours after death especially in warm weather. Sometimes maggots appear in unbelievably large numbers. Apparently the invasions on cadavers of various insects, especially beetles of different species (Coleoptera, Lepidoptera, Silphidae, Histeridae, Tenebrionidae) may follow a more or less regular course, owing perhaps, it has been thought, to the different odors that develop. It is known that certain beetles make their appearance after months or even years. The order will vary with season and locality, stage and progress of putrefaction. Enough has been said to show that the entomology of the cadaver is an intricate subject, of which only one or two high points can be touched here. The effect of modern American methods of "embalming" on the cadaveric fauna has not been studied.

#### HYPOTHYROIDISM

*To the Editor*—A woman, aged 26 had a thyroidectomy three years ago. Three months later her periods began to get irregular. She would pass large clots of blood for three or four months at a time and would have considerable pain. One year after operation she began to lose her energy, and she noticed that her hair became dry and that she was inactive sexually. She fainted easily and easily became nervous but in a different manner from before. Trifling things, such as moving signs, bothered her. I saw her about this time and my diagnosis was hypothyroidism, so desiccated gland was given in good amounts with excellent results for a time. This fall however the symptoms became much worse. She has been taking 5 grains (0.3 Gm) of desiccated thyroid every other day for more than a year and an increase in the amount taken did no good. She states that she has a peculiar taste on her tongue and that her body seems to crave something. I have given her four injections of a soluble extract from the anterior lobe of the pituitary with no results. Have I stopped too soon or what does this patient need? Please omit name.

M D, Nebraska

*ANSWER*—This patient's response to thyroid medication suggests strongly that the diagnosis of hypothyroidism was correct. However, all users of thyroid particularly in postoperative thyroidectomy patients, have learned the necessity of controlling thyroid doses by frequent basal metabolism readings. It is well known that there is no mathematical standard of thyroid dosage and that some patients present marked symptoms of myxedema without great changes in the basal metabolism. However, it is also recognized that a basal metabolism considerably lower than normal may be associated with no active signs of myxedema.

In the present instance it would seem wisest to find the basal metabolic rate and to give sufficient thyroid to raise it to normal. The dosage necessary to attain such an objective may be considerably higher than the amount indicated. After all, 0.3 Gm of desiccated thyroid every other day is not a large dose in a severe case of hypothyroidism.

It is also suggested that a pelvic examination is indicated to exclude any pathologic condition of the pelvic organs. Naturally, any abnormal condition of the pelvic organs should be corrected, and if there is any secondary anemia this also should receive attention. The dose of anterior pituitary might well be continued if the patient is not relieved by larger thyroid medication.

One other factor must be considered and that is the well known psychologic disturbances frequently associated with the diseases of the thyroid gland. It is, of course, impossible to comment on this in this patient except to suggest that it be looked into.

#### BOILED OR RAW MILK IN INFANT FEEDING

*To the Editor*—When, or at what age, is it safe to give a young child or baby "certified," or grade A, raw milk? Many physicians, including my own, advise boiling grade A milk. How much value is there in buying grade A milk, which is more expensive, if one has to boil it and kill most if not all of the vitamins contained in it? It would seem to me that, for the average family of small income, it would be just as well to buy regular pasteurized milk and boil that. Is this assumption correct? My particular reason for writing is to determine at what age I may safely stop giving boiled milk to my baby. Could one stop boiling milk sooner if pasteurized milk was used instead of grade A milk? Several books I have consulted say that boiled milk should be used until the child is 2 years old. Of course, I understand that the vitamin deficiency may be made up by appropriate doses of cod liver oil and orange juice. I ceased boiling milk for my first child at about 1 year, and did not have any apparent trouble.

D D S, Michigan

*ANSWER*—The production of certified milk has been an invaluable gift of the dairy industry to the consumers of milk and milk products and has demonstrated that it is possible to provide clean milk.

There is a division of opinion whether all milk should be boiled, though there is something to be said on both sides of the question. Boiling milk, including that which is certified, destroys the possibility of bacterial invasion, as even certified milk may become infected with pathogenic germs in transport or in the home.

All milk that is used for infant feeding should be as clean and free from bacterial invasion as possible, and merely boiling the milk does not remove filth or toxic products. Boiled milk still retains its vitamin A content, while it is true that boiling milk destroys vitamin C, vitamin A is not affected. The deficiency may be supplied by the use of vitamin-containing substances.

It is equally important to recall that boiling cow's milk renders it more digestible, softens the curd and prevents indigestion and diarrheal disorders. Whether one should boil pasteurized milk depends on the source of the milk supply and the efficiency of pasteurization, but the fact still remains that boiling even pasteurized milk renders the curd softer and the milk more easy of digestion.

The question at what age one may stop boiling the baby's milk may be replied to by asking another question. Why stop boiling the milk, if by this simple process one renders it more digestible and destroys the numerous disease dangers that lurk in cow's milk? Drinking raw milk is an acquired taste like eating raw meat. Many persons correctly have a repulsion against partaking of either in the raw state.

#### PERSISTENT EDEMA OF FOOT AFTER OPERATION

*To the Editor*—I have had quite a few cases of persistent edema of a foot following fracture of the base of metatarsal bone and have not been able to clear this up. I have performed Kondoleon operations, only to have this stubborn edema return. Kindly advise as to treatment. Please omit name.

M D, New York

*ANSWER*—The patient should be put to bed. Hot fomentations should be applied, saturated epsom salt solution being used combined with elevation of the foot and lower part of the leg on one pillow. Radiant heat, gentle massage and the application of a long foot elastic bandage going from just above the ankle to the tips of the toes should be helpful. The elastic is to be worn when the patient is out of bed and the application when the patient is in bed with the foot elevated. A high lace shoe should be worn. Special exercises for the transverse arch should be done. The feet should be massaged twice daily with equal parts of ointment of rose water and any anodyne ointment, and foot and leg contrast sprays should be used.

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

ALASKA Juneau, March 14 Sec. Dr Harry C DeVighe, Juneau  
AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS Milwaukee, June 12 Sec. Dr William H Wilder, 122-S Michigan Blvd., Chicago  
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY The written examination will be given in cities of the United States and Canada where there is a Diplomate who may be empowered to conduct the examination, April 1 The general oral clinical and pathological examination will be held in Milwaukee, June 13 Sec., Dr Paul Titus, 1015 Highland Bldg., Pittsburgh  
AMERICAN BOARD OF OTOLARYNGOLOGY Milwaukee, June 12 Sec., Dr W P Wherry 1500 Medical Arts Bldg Omaha  
CALIFORNIA Los Angeles Feb 27 to March 2 Sec., Dr Charles B Pinkham 420 State Office Bldg Sacramento  
CONNECTICUT Regular Hartford March 14 15 Endorsement Hartford, March 28 Sec., Dr Thomas P Murdock 147 W Main St Meriden. Homeopathic New Haven March 14 Sec., Dr Edwin C M Hall 82 Grand Ave., New Haven  
IDAHO Boise April 4 Commissioner of Law Enforcement Hon Emmitt Pfost Boise.  
MAINE Portland March 14 15 Sec. Dr Adam P Leighton Jr, 192 State St., Portland.  
MASSACHUSETTS Boston March 14 16 Sec. Dr Stephen Rushmore, 144 State House Boston  
MINNESOTA Basic Science Minneapolis April 4 5 Sec. Dr J C McKinley 126 Millard Hall University of Minnesota Minneapolis  
MONTANA Helena April 4 Sec., Dr S A Cooney 7 W 6th Ave Helena.  
NEW HAMPSHIRE Concord, March 16-17 Sec. Dr Charles Duncan Concord  
OKLAHOMA Oklahoma City, March 14 15 Sec. Dr J M Byrum Shawnee  
PUERTO RICO San Juan March 7 Sec. Dr O Costa Mandry Box 536, San Juan  
RHODE ISLAND Providence April 6-7 Dir. Dr L A Round 319 State Office Bldg., Providence.  
TENNESSEE Memphis, March 21 24 Sec. Dr A B DeLoach, Medical Arts Bldg Memphis.  
WEST VIRGINIA Charleston March 14 Sec. Dr W T Henshaw, State Health Department Charleston

### New York June Report

Mr Herbert J Hamilton, chief, Professional Examinations Bureau, reports the written examination held in Albany, Buffalo, New York and Syracuse, June 27-30, 1932 The examination covered 9 subjects and included 10 questions An average of 75 per cent was required to pass Six hundred and three candidates were examined, 471 of whom passed and 132 failed The following colleges were represented

College	PASSED	Year Grad	Number Passed
Yale Univ. School of Med	(1925) (1929) (1930) (1932)	9	4
Georgetown University School of Medicine	(1932) (1932) (1932) (1932)	9	9
George Washington Univ. School of Med	(1931) (1932) (1932) (1932)	9	3
Howard University College of Medicine	(1929) (1929) (1929) (1929)	1	1
University of Georgia Medical Department	(1932) (1932) (1932) (1932)	2	2
Loyola University School of Medicine	(1931) (1931) (1931) (1931)	1	1
Northwestern University Medical School	(1931) (1932) (1932) (1932)	5	5
Rush Medical College	(1930) (1930) (1930) (1930)	1	1
University of Louisville School of Medicine	(1926) (1929) (1931) (1931)	3	3
Johns Hopkins Univ. School of Med	(1926) (1929) (1931) (1931)	20	20
University of Maryland School of Medicine and College of Physicians and Surgeons	(1931) (1932) (1932) (1932)	9	9
Boston Univ. School of Med	(1928) (1929) (1930) (1932) (1932)	6	6
Harvard Univ. Med School	(1924) (1929) (1930) (1932) (1932)	6	6
Tufts College Med School	(1928) (1929) (1931) (1932) (1932)	1	1
University of Michigan Medical School	(1930) (1932) (1932) (1932)	2	2
St. Louis University School of Medicine	(1932) (1932) (1932) (1932)	1	1
Washington University School of Medicine	(1932) (1932) (1932) (1932)	2	2
Creighton University School of Medicine	(1931) (1932) (1932) (1932)	17	17
Albany Medical College	(1930) (1932) (1932) (1932)	24	24
Columbia Univ. Coll. of P and S	(1930) (1931) (1931) (1932) (1932)	21	21
Cornell Univ. Med Coll	(1929) (1930) (1931) (1932) (1932)	79	79
Long Island College of Medicine	(1931) (1932) (1932) (1932)	53	53
New York Homeopathic Medical College and Flower Hospital	(1916) (1932) (1932) (1932)	32	32
Syracuse University Coll. of Med	(1926) (1931) (1932) (1932)	40	40
University and Bellevue Hosp. Med Coll	(1910) (1930) (1932) (1932)	35	35
University of Buffalo School of Med	(1931) (1932) (1932) (1932)	6	6
University of Rochester School of Medicine	(1932) (1932) (1932) (1932)	1	1
University of Cincinnati College of Medicine	(1932) (1932) (1932) (1932)	1	1
Hahnemann Med. College and Hospital of Philadelphia	(1931) (1932) (1932) (1932)	5	5
Jefferson Medical College of Philadelphia	(1931) (1932) (1932) (1932)	1	1
Temple University School of Medicine	(1930) (1931) (1931) (1931)	2	2
University of Pennsylvania School of Med	(1931) (1931) (1931) (1931)	1	1
Woman's Medical College of Pennsylvania	(1929) (1929) (1929) (1929)	1	1
Vanderbilt University School of Medicine	(1926) (1926) (1926) (1926)	1	1
University of Texas School of Medicine	(1932) (1932) (1932) (1932)	1	1
University of Vermont College of Medicine	(1929) (1929) (1929) (1929)	1	1
Medical College of Virginia	(1912) (1912) (1912) (1912)	2	2
Dartmouth University Faculty of Medicine	(1930) (1931) (1931) (1931)	3	3
Queen's University Faculty of Medicine	(1929) (1932) (1932) (1932)	1	1
McGill University Faculty of Medicine	(1931) (1931) (1931) (1931)	3	3
Medizinische Fakultät der Universität Wien	(1931) (1931) (1931) (1931)	1	1
Université Catholique de Louvain Faculté de Médecine	(1931) (1931) (1931) (1931)	1	1

King's College Hospital Medical School, University of London (1932)† 1  
Faculty of Medicine (1932)† 1  
Medizinische Fakultät der Thüringischen Landesuniversität Jena (1925), (1928) 2  
Regia Università di Napoli Facoltà di Medicina e Chirurgia (1923) 1  
Regia Università di Palermo degli studi Facoltà di Medicina e Chirurgia (1928) 1  
Regia Università di Roma degli studi Facoltà di Medicina e Chirurgia (1928) 1  
University of Edinburgh Faculty of Medicine (1931), (1931), (1931)† 5  
Osteopaths (1931), (1931), (1931)† 2

College	Year Grad	Number Failed
Georgetown Univ. Sch. of Med	(1928, 2) (1931, 2), (1932) 9	13
George Washington University School of Medicine	(1931) 2	2
Howard University College of Medicine	(1928) (1930)	2
Loyola University School of Medicine	(1931) 2	2
University of Kansas School of Medicine	(1932)	1
Johns Hopkins University School of Medicine	(1927)	1
University of Maryland School of Medicine and College of Physicians and Surgeons	(1929), (1932)	2
Boston University School of Medicine	(1932)	1
Tufts College Medical School	(1928)	1
University of Michigan Medical School	(1930)	1
St. Louis University School of Medicine	(1928), (1930)	2
Washington University School of Medicine	(1928), (1931)	2
Creighton University School of Medicine	(1929), (1930)	2
University of Nebraska College of Medicine	(1930)	1
Albany Medical College	(1932) 2	2
Columbia Univ. Coll. of Phys and Surgs	(1929) (1932) 2	3
Cornell University Medical College	(1931) (1932)	2
Long Island College of Medicine	(1930) (1931), (1932) 5	7
New York Homeopathic Med. Coll. and Flower Hosp.	(1932), (1932), (1932), (1932)	7
Syracuse University College of Medicine	(1931) (1932) 4	5
University and Bellevue Hospital Medical College	(1927), (1931) 2	9
University of Buffalo School of Medicine	(1932), (8)	8
University of Rochester School of Medicine	(1931)	1
Hahnemann Medical College and Hospital of Philadelphia	(1931) (1932)	2
Jefferson Medical College of Philadelphia	(1930)	1
Temple University School of Medicine	(1931)	1
Medical College of the State of South Carolina	(1931)	1
University of Vermont College of Medicine	(1931), (1932) 2	3
Medical College of Virginia	(1932)	1
Queen's University Faculty of Medicine	(1927) (1930)	2
McGill University Faculty of Medicine	(1931) 2	2
Karl Franzens Universität Medizinische Fakultät, Graz	(1931)	1
Medizinische Fakultät der Universität Wien	(1926) (1926)†	2
Deutsche Universität Medizinische Fakultät Prag	(1925)	1
Friedrich Alexanders Universität Medizinische Fakultät Erlangen	(1930)†	1
Queen's University Faculty of Medicine Ireland	(1925)	1
Regia Università di Genova degli studi Facoltà di Medicina e Chirurgia	(1930) (1931)†	2
Regia Università di Napoli Facoltà di Medicina e Chirurgia	(1923) 2) (1927) 2) (1929)	5
Regia Università di Palermo degli studi Facoltà di Medicina e Chirurgia	(1920) (1920)† (1928)	3
Regia Università di Roma degli studi Facoltà di Medicina e Chirurgia	(1928)† (1931), 2)	3
Universitatea Regele Ferdinand I in din Cluj Facultatea de Medicină și Farmacie	(1926)	1
University of Aberdeen Faculty of Medicine	(1905)	1
University of Edinburgh Faculty of Medicine	(1931)†	1
Osteopaths		20

Mr Hamilton also reports 154 physicians licensed by endorsement from May 1 to Nov 1, 1932 The following colleges were represented

College	Year Endorsement	Endorsement of
Stanford University School of Medicine	(1929)	California
University of Colorado School of Medicine	(1919)	Colorado
Yale University School of Medicine	(1929) N B M Ex	New Jersey
Georgetown University School of Medicine	(1929) Maryland	
George Washington University School of Medicine	(1930)	Maryland
Howard University College of Medicine	(1930)	Maryland
Emory University School of Med.	(1927) Georgia	(1931) N B M Ex
Loyola University School of Medicine	(1932)	Iowa N B M Ex
Rush Medical College	(1926) Illinois	(1931) N B M Ex
College of Physicians and Surgeons of Chicago	(1910)	Wisconsin
Indiana University School of Medicine	(1927)	(1931) Indiana
State University of Iowa College of Medicine	(1926)	
University of Kansas School of Medicine	(1929) N B M Ex	
University of Louisville Medical Department	(1912)	Penn.
Tulane University of Louisiana School of Medicine	(1930) N B M Ex.	
College of Physicians and Surgeons of Baltimore	(1906)	Maryland,
Johns Hopkins University School of Medicine	(1921)	Minnesota
University of Maryland School of Medicine	(1928) 2) N B M Ex (1926), (1927) (1928)	
University of Maryland School of Medicine	(1930)	Maryland
University of Maryland School of Medicine and College of Physicians and Surgeons	(1916) (1931) 2)	(1932) Maryland
Boston University School of Medicine	(1916)	Virginia
Harvard University Medical School	(1926)	
Tufts College Medical School	(1926) Massachusetts	(1930) N B M Ex
University of Michigan Department of Medicine	(1912)	Michigan
University of Michigan Medical School	(1924) 2)	Michigan
University of Minnesota College of Med. and Surg.	(1932)	Minnesota



University of Minnesota Med School (1922), (1928), (1929)	Minnesota
St Louis University School of Med (1914)	Alabama, (1917)
Washington University School of Medicine (1929)	N B M Ex
John A Creighton Medical College (1911)	Illinois
Albany Medical College (1931, 3)	N B M Ex
Columbia University College of Phys and Surgs (1931 5)	N B M Ex
Cornell Univ Med Coll (1928, 2), (1929), (1930, 2), (1931)	N B M Ex
Long Island College Hospital (1930)	N B M Ex
Syracuse University College of Medicine (1926), (1929)	N B M Ex
University of Buffalo School of Medicine (1931)	N B M Ex
University of Rochester School of Med (1929, 2), (1931 2)	N B M Ex
Ohio State University College of Medicine (1930)	Ohio
University of Cincinnati College of Medicine (1925)	Ohio
Western Reserve University School of Medicine (1930)	Ohio
Jefferson Medical College of Philadelphia (1904)	New Jersey
Medico Chirurgial College of Philadelphia (1915)	Penn
Temple University School of Medicine (1931)	Delaware
University of Pennsylvania Department of Medicine (1908)	New Hamp
University of Pennsylvania School of Medicine (1927)	N Carolina
Medical College of the State of South Carolina (1931)	N Carolina
Meharry Medical College (1931)	Maryland, Tennessee
University of Tennessee College of Medicine (1925)	Louisiana,
(1930) Tennessee	
Vanderbilt University Sch of Med (1929), (1930)	(1931) Tennessee
Baylor University College of Medicine (1931)	(1931) Texas
University of Texas School of Med (1927) (1931)	(1932) Texas
University of Vermont College of Medicine (1921)	Penna,
(1931, 2) N B M Ex	
Medical College of Virginia (1931)	N Carolina,
(1928), (1930) (1931) Virginia	
University of Virginia Dept of Med (1918), (1924), (1927)	Virginia,
(1930) N B M Ex	
Marquette University School of Medicine (1932)	Wisconsin
Queen's University Faculty of Medicine (1915)	Ontario,
(1928) Wisconsin	
University of Toronto Faculty of Medicine (1926)	Ontario
McGill University Faculty of Medicine (1897)	Washington,
(1922) Alberta, (1930 2), (1931, 3) N B M Ex	
Leopold Franzens Universität Medizinische Fakultät (1919)	Wisconsin
Austria	
Medizinische Fakultät der Universität Wien (1890) † (1921, 2) †	Diploma,
(1919) Illinois (1928) New Jersey	
Universidad Nacional Facultad de Medicina, El Salvador (1907)	California
Schlesische-Friedrich Wilhelms Universität Medizinische Fakultät, Breslau (1925) †	Germany
Medizinische Fakultät der Thüringischen Landesuniversität Jena (1922) †	Germany
Magyar Királyi Pazmany Petrus Tudományegyetem Orvosi Fakultása Budapest (1910) † (1914), † (1917), † (1924) †	Diploma
Magyar Királyi Erzsébet Tudományegyetem Orvostudományi, Pecs (1926) †	Diploma
Regia Università di Napoli Facoltà di Medicina e Chirurgia (1923)	Diploma
University of Malta Faculty of Med and Surg (1922) †	Malta
Universitatea Regele Ferdinand I din Cluj Facultatea de Medicina și Farmacie (1921) †	Diploma
Licentiate of the Royal College of Physicians Royal College of Surgeons, Edinburgh, and of the Royal Faculty of Phys and Surgs of Glasgow (1929 1932) N B M Ex	
University of Glasgow Medical Faculty (1915) †	Diploma
Université de Lausanne Faculté de Médecine (1928) †	Puerto Rico
Faculté Française de Médecine de l'Université de St Joseph, Bevrouth (1920) †	Diploma
Imperial University of St Vladimir Kiev (1897) †	Michigan
Osteopaths New Jersey, 2	

\* This applicant has received an M B degree and will receive an M D degree on completion of an internship

† Verification of graduation in process

### Minnesota October Report

Dr E J Engberg, secretary, Minnesota State Board of Medical Examiners, reports the oral written and practical examination held in Minneapolis, Oct 18-20, 1932. The examination covered 12 subjects and included 60 questions. An average of 75 per cent was required to pass. Thirty-six candidates were examined, all of whom passed. One physician was licensed by reciprocity and 2 physicians were licensed by endorsement. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Yale University School of Medicine	(1929)	92 4	
Northwestern University Medical School	(1930)	92 4	
Rush Medical College (1931) 94 1	(1932)	89 1	
Johns Hopkins University School of Medicine	(1931)	85 6	
University of Minnesota Medical School (1930) 91 1, 91 4,			
(1931) 86 3 * 87 2 * 87 4 * 87 5 * 88 5 * 90 4 * 90 4 *			
(1932) 85 2 * 86 * 86 3 * 86 6 * 87 1 * 87 3 * 87 5 *			
88 4 * 88 4 * 89 4, 90 4, 91 3 * 92 2 92 4, 93 1			
University of Nebraska College of Medicine (1931)		94 3	
University of Pennsylvania School of Medicine (1932)		89 5	
Baylor University College of Medicine (1931)		89 4	
University of Toronto Faculty of Medicine (1929)		91 4	
University of Western Ontario Medical School (1929)		88 3	
McGill University Faculty of Medicine (1929)		90 6	

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Jefferson Medical College of Philadelphia	(1927)	California	

College	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
School of Medicine of the Division of Biological Sciences, University of Chicago	(1931)	N B M Ex	
University of Minnesota Medical School	(1932)	N B M Ex	

\* These applicants have received an M B degree and will receive an M D degree on completion of an internship

## Book Notices

**Children's Tonsils In or Out A Critical Study of the End Results of Tonsillectomy** By Albert D Kaiser MD Associate Professor of Pediatrics, University of Rochester Medical School Cloth Price \$5.00 Pp 307 with 26 Illustrations Philadelphia & London J B Lippincott Company, 1932

It is a pity that Dr Kaiser's well documented book did not appear some years ago, when the craze to remove tonsils was at its height, for Dr Kaiser has the figures. For ten years he observed thousands of tonsillectomized children and others not operated on, as controls. With authority, this work states what many have suspected. Tonsillectomy is far from the cure-all that it was said to be, it failed to help or cure many ailments in which the relationship between the tonsil and the illness was, to say the least, far fetched, indeed, it frequently does not relieve the ailments that infected tonsils were strongly believed to cause. The well performed adenoidectomy in the child really suffering from adenoid obstruction gives fine results in a high percentage of instances. Were the removal of adenoids an operation done by itself, there would be little complaint as to the end-result. The theory of focal infection, however, threw a great white light on the tonsils. In the wave of enthusiasm following the promulgation of an idea that had much truth in it, tonsils of all kinds were sacrificed with little thought. The benefits of adenoidectomy were lost sight of in the disappointing results following so many tonsillectomies. One wonders, by the way, whether tonsillectomy would have been nearly so common if the technical difficulties of removal had been greater. Dr Kaiser's figures show that tonsillectomy is of value in preventing some ailments. Many others are aggravated or recur more frequently after tonsillectomy, and still others appear after the operation that were absent prior to it. For instance, attacks of laryngitis are not much improved, attacks of bronchitis are even more prevalent among the tonsillectomized children of certain ages. After 3 years of age, Kaiser states, a child with suppurative otitis media is as likely to develop mastoiditis with the tonsils and adenoids removed as when they are present. This book should be in the hands of every physician, it is a much needed corrective to abuses that physicians and the public itself have become increasingly aware of in the last few years.

**Anatomie des Menschen Ein Lehrbuch für Studierende und Ärzte** Von Hermann Braus Well o ö Professor an der Universität Würzburg, Band III Centrales Nervensystem Von Curt Elze o ö Professor an der Universität Rostock Cloth Price 11.80 marks Pp 234 with 126 Illustrations Berlin Julius Springer 1932

This volume covers the central nervous system. The original plan would have included in it also the peripheral nervous system but the plan was changed because of Braus's death in 1924 after he had prepared the first volume (1920) and the second (1924). Prof Curt Elze of Rostock prepared and edited a second edition of the first volume, in 1929, and now this third volume. The first two volumes are admirable. Structure and function are combined and identified. The living human body is regarded as the interplay of various energies in the body and in its environment. This characteristic brings Braus's book into accord with fundamental biologic conceptions. Through it students get facts and some understanding of them. In the present volume Professor Elze maintains the standard and quality of the first two. The general section (pp 1-13) emphasizes the unity of the nervous system and its peripheral connections. Simply, clearly and effectively, function appears as the key to structure. Structural elements (cells, fibers, nerves, pp 13-30) are treated briefly and clearly, with exceptionally good illustrations. The general account of the brain and cord is distinguished by subordination of morphologic concepts to structural and functional unity. Artificial simplification by arbitrary subdivision—a misleading defect in many textbooks—does not distort the truth so much in this book. The presentation of the cortex is conservative in theory and constructive in suggestion. The little that is known and the much more that is unknown appear in sharp relief. Cortical localization is clearly and graphically presented in as true a picture of cortical mechanism as the general student can assimilate. There is a judicious balance between mosaics of definite "centers" and equipotential dispersal of totalizing func-

tions. Conscientious neurologists may think parts (such as speech) are dogmatic, but they are not obscure and the student who assimilates the spirit of the book will make of clear conceptions a basis for further and clearer thought. The book is well illustrated, many of the illustrations being original. The publisher's work makes the book a satisfaction in itself. A concluding volume covering the peripheral nerves, the sympathetic nervous system, the sense organs and the blood and lymph vessels of the nervous system is in preparation.

**Annual Review of Biochemistry** Volume 1 Edited by James Murray Luck. Stanford University. Cloth. Price \$5. Pp 724. Stanford University. Stanford University Press 1932.

The first volume of this timely annual review contains thirty chapters on special topics in biochemistry. The advisory committee is to be congratulated on the selection of the subject matter covered and in general on the choice of authors. It is a truly international undertaking from the standpoint of the literature covered as well as with regard to the selection of authors. In addition to the obvious and usual topics in biochemistry, the volume includes the following more unusual but welcome reviews: permeability, by Hober, the role of water in the structure and properties of protoplasm, by R. A. Cortner, the metabolism of brain and nerve, by E. G. Holmes, chemical embryology, by Joseph Needham, the terpenes, saponins and closely related compounds, by Ruzicka, the chemistry of bacteria, by Stephenson, immunochemistry, by Michael Heidelberger, and the biochemistry of the fungi, by N. N. Iwanoff. At the close of each chapter appears a bibliography, and the book closes with an extensive index of names of investigators.

**Sexual Pathology Being a Study of the Abnormalities of the Sexual Functions**. An Exhaustive Treatise on Sexual Symbolism, Hypereroticism, Impotence etc. Based Upon Research Observations and Recent Clinical Data Gathered at the Institute for Sexual Science in Berlin. By Magnus Hirschfeld, M.D. Authorized translation by Jerome Gibbs. Advanced Sexual Science Series. Cloth. Price \$5. Pp 349 with 3 illustrations. Newark, N. J. Julian Press 1932.

This volume is divided into three parts: (1) sexual symbolism, (2) hypereroticism, (3) impotence. It is an excellent outline of the subject and quite scientific in its consideration. It seems, however, to offer little that is not already available in many other books on the subject.

**The Cardiac Output of Man in Health and Disease**. By Arthur Crollman, Ph.D. M.D. Associate Professor of Physiology in the Medical School of the Johns Hopkins University. Cloth. Price \$4. Pp 325 with 10 illustrations. Springfield, Ill. & Baltimore. Charles C. Thomas 1932.

The output of the heart is at present receiving wide attention in clinical and physiologic laboratories interested in the circulatory system. It is highly probable that the determination of the cardiac output will soon take its place with other necessarily available special laboratory tests, such as electrocardiograms, basal metabolic rate determinations and roentgenograms. The author presents this timely subject in a manner at once scholarly and practical. An excellent historical survey accompanied by a comprehensive bibliography introduces the reader to the details of the author's method for determining the output of the heart. This technique is lucidly explained and for certain purposes is probably the most satisfactory one now available. It is a "foreign gas," indirect method in which acetylene has been shown to be the gas of choice. The remainder of the book is largely devoted to the presentation of the results of studies made on healthy individuals under varying physiologic and pharmacologic conditions. A few concepts new at least to clinicians are offered such as those concerning the relative work of the heart with the body at rest during digestion and during mild and strenuous exercise. The method applied to diseased hearts has not been sufficiently used, as the author admits, to enable one to evaluate it properly. It would seem to have definite value in estimating the chief function of the heart from time to time in a given case under different types of therapy. By the author's own protocols it is unable to differentiate between the seriousness of various valvular lesions in a case of clinical compensation. In cases of myocardial insufficiency of whatever etiology with edema of the lungs the method has been questioned in theory by several investigators in the same field. The author defends somewhat polemically his otherwise obviously objective work. His contention that it

is reliable in selected cases of congestive heart failure. In spite of the uncertainty expressed with reference to some of the clinical applications of the author's method, the monograph as a whole is an excellent one and should be of value to clinicians and physiologists alike.

**Soviet Russia As I Saw It Its Accomplishments Its Crimes and Stupidities**. By Dr. William J. Robinson. Cloth. Price \$2. Pp 224. New York. International Press 1932.

Dr. Robinson had been for years convinced that the Russian system since the revolution represented the salvation of mankind and that it would provide the end of war and freedom from poverty and distress. He was so certain of this that he wrote down his credo before he left finally for a trip to Russia. When he returned, he was a greatly disappointed man. He had found Russia full of filth, the working man exploited, the tourists exploited by special show places arranged for their enlightenment as a form of propaganda, transportation disorganized, the people hungry and no food available. Those who have listened to the romance emanating from the propaganda bureaus of Russia will find Dr. Robinson's account most interesting and a certain corrective for the rainbow through which they have been gazing on the Russian situation.

**Klima und Tuberkulose**. Von Prof. Dr. V. Conrad, Prof. Dr. W. Hausmann, Prof. Dr. A. Bacmeister, Dr. H. Lossnitzer, Dr. Walter Behrend und Dr. M. Gähwyler. Nr. 48. Tuberkulose Bibliothek. Beihefte zur Zeitschrift für Tuberkulose. Herausgegeben von Prof. Dr. Lydia Rabinowitsch. Paper. Price 11.50 marks. Pp 112 with 44 illustrations. Leipzig. Johann Ambrosius Barth 1932.

Revealing a revived interest in climate, several books came from the German press in 1932 containing the progress of knowledge on the physiology of climate and of climate in relation to disease. The present work begins with a scholarly chapter by Conrad on the physical basis of climate. Suitable quotations are drawn from the poet-scientist Goethe to head each section of this scientific contribution. Meteorology in all its aspects is completely discussed. The increase in the ozone content of the atmosphere in thunderstorms and at high altitudes and the relation of ozone to radiation are matters of interest. The iodine content of the atmosphere is increased in regions that are sources of iodine. At high altitudes, far inland, salts identical with those of sea water are found in the atmosphere. Benjamin Franklin is credited with the first suggestions that volcanic dust might affect climate. In this regard it may be recalled that the late Dr. Harry Marshall of the University of Virginia pointed out that the disappearance of the dinosaur on all continents was coincident with the unusual volcanic activities of that period. The inference was drawn by Marshall that the excessive atmospheric dust interfered with the actinism so necessary to the dinosaur. Other sources of dust in the atmosphere are mentioned by Conrad, including the desert dust storms, such as the "black blizzards" of Arizona and the heavy smoke-laden air of cities. The effect of the various atmospheric contents on radiation is analyzed. Aqueous vapor, carbon dioxide gas and ozone absorb in a high degree the longer wave radiations. In winter there is twice as much ultraviolet radiation at an altitude of 6,000 feet as there is at the level of the sea, and while there is less in summer, on account of clouds the high altitudes average for the year much more ultraviolet radiation, with smaller fluctuations, than is the case at sea level. Conrad concludes that moderate altitudes are the best locations for sanatoriums.

Bacmeister and Lossnitzer agree with this conclusion and analyze the climatic conditions of moderate altitudes. They point out that the present tendency to collapse therapy overlooks the importance of regarding tuberculosis as a general disease. Behrend gives an historical sketch of the climate of the sea coast in relation to scrofula. Behrend also presents a series of roentgen reproductions illustrating the recovery of patients with pulmonary tuberculosis at the seashore. Gähwyler of Arosa stresses the value of the higher altitudes in the treatment of tuberculosis. Tables are given comparing the hours and intensity of sunshine at the Swiss health resorts with towns at sea level. Gähwyler concedes that experimentation with tuberculous animals has not been able to determine the relative value of rarefied air, of increased radiation or of a dry atmosphere. While children do not escape infection with tuberculosis at Arosa the disease rarely becomes generalized and advanced phthisis is unknown. In general, the writers

of this monograph agree that the dry atmosphere and increased radiation of moderate and of high altitudes tend to lift the bodily resistance. Complete proof is not offered that climatic treatment of tuberculosis has a specific value. The treatment of tuberculosis at altitudes is time honored and it may be that scientific discoveries of the future will substantiate the value of altitude. Most of the articles are accompanied by extensive bibliographies.

## Medicolegal

### Advertising as Unprofessional and Dishonorable Conduct

(*Sapero v. State Board of Medical Examiners (Colo.)*, 11 Pac. (2d) 555)

The defendant was a licensed physician. He had practiced medicine for upward of thirty-five years. He visited various parts of the state from time to time advertising his comings in local newspapers and, in some recent advertisements at least, announcing his ability to treat successfully certain named diseases. The state board of medical examiners deemed his publication of certain advertisements in 1930 and 1931 unprofessional and dishonorable conduct within the meaning of the law and revoked his license to practice. The revocation was upheld by the district court, city and county of Denver, and the defendant carried the case to the Supreme Court of Colorado. There counsel for the board contended that the power to make final decision with respect to such matters had been committed to the board by the General Assembly, and that even though a conclusion of the board was erroneous, it was not subject to review by certiorari. But, said the Supreme Court, courts cannot delegate their judicial duties. The findings of the board are persuasive, but not conclusive. The board has power in the first instance to decide what constitutes unprofessional conduct. If, however, it abuses that power, the court will reverse the board's judgment.

Various grounds for the revocation of licenses are stated in the law (section 4536, C. L. 1921). Among them are certain named kinds of advertising, but it was not claimed that the advertising in this case came within any of the condemned classes. The complaint alleged "unprofessional or dishonorable conduct," and evidence of certain advertising, not of any kind specifically condemned by law, was held by the board of medical examiners to be proof of such conduct. In support of its action, the board claimed that the board itself had legislative power, delegated to it by the General Assembly. But, said the Supreme Court, the General Assembly cannot delegate such power, and the court could find no place in the medical practice act where it had even attempted to do so. It was impossible, as well as unnecessary, for the General Assembly to anticipate all the evil deeds that the words "immoral, unprofessional or dishonorable" were intended to cover, but the law enacted by the Assembly needed no reinforcement by supposed legislation by the board of medical examiners. The argument that the board of medical examiners is more capable than any other agency of determining the standards of the medical profession and hence should be the sole judge of the appellant's conduct was regarded by the court as wholly beside the point. A physician's license cannot be revoked merely for violating professional ethics or the rules of a board of health, to be actionable, the offending conduct must amount to a breach of law.

The appellant had been advertising for thirty-five years by sufferance at least. He had, after a previous informal hearing before the board, promised to modify his advertising to meet objection that had been raised to it and he had kept faith. These extenuating circumstances, the Supreme Court suggested, called for an exercise of leniency, and a major punishment might amount to a great abuse of discretion. Even if the offending advertisements were within the purview of the statute, a milder penalty should have been considered under the circumstances. If the appellant's advertisements are repeated and if he is then charged with an offense under the statute and with nothing else, there will be time enough to consider the question of his culpability.

In a specially concurring opinion, Butler, J., called attention to the fact that legislation authorizing the revocation of a physician's license must, to be valid, bear a fair relation to the

public health, safety, morals, or welfare, and tend to promote or protect them. The legislature cannot, under the guise of a police regulation, provide for the revocation of a physician's license for a mere breach of ethics not involving moral turpitude or dishonorable conduct. Such advertisements as those published by the appellant may be considered unethical by some or even by many physicians and may constitute ground for exclusion from a medical society. But since the appellant's advertisements, in the opinion of Butler, J., were entirely harmless and could not injuriously affect the public health, safety, morals or welfare, they no more justified the revocation of a physician's license than would a mere breach of etiquette or the exhibition of table manners that do not conform to the usage of polite society. If the statute attempted to make such advertising a ground for the revocation of a physician's license, it would be unconstitutional and void.

**Workmen's Compensation Acts Strain and Cerebral Hemorrhage**—In the course of his employment, Krenz tried to lift or turn a tank weighing about 400 pounds. After he completed his task, his face was seen to become distorted. He crawled out of the pit in which he had been working and was led to a place where he could sit down. He immediately collapsed and was carried unconscious to a physician's office and thence to his home. After eight or ten days he could sit up, but his left side was paralyzed and his memory was impaired. He filed claim with the industrial commission for compensation under the workmen's compensation act. All medical experts agreed that the claimant was disabled by an injury to the brain that occurred while he was working as described. Each of four medical experts called by the claimant testified that the injury was due to the rupture of a blood vessel in the brain, under the strain of lifting. One of these experts thought, and in this opinion the other three concurred, that the claimant had in the arteries of his brain a so-called military aneurysm, a little place where the vessel walls were weak, and that the aneurysm "blew out." Medical experts called by the employer thought that the lifting may not have caused the injury. One of them expressed the opinion that the disability was more likely due to thrombosis, cutting off the blood supply to part of the brain and thus causing paralysis. Although the rupture of a military aneurysm was possible, it was, in the opinion of this witness, improbable because of the rarity of that condition. The industrial commissioner awarded compensation, and the employer appealed to the Supreme Court of Minnesota. Considering the evidence, said the Supreme Court, there is no merit to the attack on the award of the industrial commission. There was almost instantaneous connection between the exertion in the course of employment and the workman's collapse, and even a layman might rightly conclude, without the aid of medical opinion, that the exertion ruptured a blood vessel in the brain. The award was accordingly affirmed.—*Krenz v. Krens Oil Co. (Minn.)*, 243 N. W. 108.

**Malpractice Evidence of General Reputation for Skill and Care**—The declaration charged the defendants, a surgeon who performed a tonsillectomy, his anesthetist, who administered an anesthetic, and the hospital in which the operation was performed, with unskillfulness and negligence. The anesthetist died before the trial and the action was dismissed as to him. Witnesses on behalf of the surviving defendants, however, were permitted, over the plaintiff's objection, to testify as to the skill and experience of the dead defendant as a surgeon and anesthetist. The plaintiff, after a judgment against him, contended on appeal that the admission of this testimony was prejudicial error, pointing out that the dead anesthetist's reputation for skill and carefulness was not in issue. Although the language of the declaration, said the Supreme Court of Appeals of West Virginia, charged no specific act of negligence, the negligence with which the defendants were charged arose "by and through their want of skill and care." The language used did not limit the "want of skill and care" to any particular act. It was a direct charge against the defendants' proficiency generally, and where the allegation in the pleadings of "want of skill and care" is general, and not confined to a specific act, a physician's reputation for skillfulness and care becomes a proper inquiry for such consideration as the jury deems requisite.—*Dudley v. Gracie Hospital (W. Va.)*, 164 S. E. 670.

## Society Proceedings

### COMING MEETINGS

American Association of Anatomists Cincinnati April 13 15 Dr George W Corner University of Rochester School of Medicine, Rochester N Y, Secretary  
American Orthopsychiatric Association New York February 23 25 Dr George S Stevenson, 450 Seventh Avenue, New York, Secretary  
American Physiological Society, Cincinnati April 10 12 Dr Frank C Mann, Mayo Institute Rochester Minn. Secretary  
American Society for Experimental Pathology Cincinnati, April 10 12 Dr C. Phillip Miller Jr University of Chicago Department of Medicine Chicago Secretary  
American Society for Pharmacology and Experimental Therapeutics, Cincinnati April 10 Dr V E Henderson Medical Building, University of Toronto Toronto, Canada Secretary  
American Society of Biological Chemistry Cincinnati, April 10 12 Dr Howard B Lewis, University of Michigan Medical School Ann Arbor Mich Secretary  
Federation of American Societies for Experimental Biology Cincinnati April 10-12 Dr C. Phillip Miller, Jr, University of Chicago Department of Medicine, Chicago Secretary  
New York Medical Society of the State of New York, April 3 5 Dr Daniel S Dougherty, 2 East 103d Street New York Secretary  
Pacific Coast Surgical Association Del Monte Calif February 23 2 Dr Edgar L Gilcrest 384 Post Street, San Francisco, Secretary  
Southeastern Surgical Congress Atlanta Ga March 6-8 Dr B T Beasley 45 Edgewood Avenue Atlanta, Secretary  
Tennessee State Medical Association, Nashville April 11 13 Dr H H Shoulders, 706 Church Street, Nashville, Secretary

### SOUTHERN SURGICAL ASSOCIATION

Forty-Fifth Annual Session held at Miami Fla Dec 13 15 1932

(Concluded from page 454)

#### Wounds of the Heart

DR. ALBERT O SINGLETON, Galveston, Texas The important causes of death from heart wounds which should be remembered are "herz tamponade," hemorrhage, foreign bodies, and secondary infection. Aspiration of the pericardium may relieve the patient from "herz tamponade" temporarily until the operation can be performed, occasionally, aspiration alone may save life. Foreign bodies may do little harm and should not be removed in most instances. Extreme care should be used to eliminate infection, which often follows in the pleural cavity and takes many lives after apparent successful suture.

#### Treatment of Fractures of Shaft of Femur

DR G A HENDON, Louisville, Ky My plan does not entirely depend on the cardinal principles involved in the treatment of fractures, such as splinting, suspension and skeletal traction, but contemplates the use of a device made of beef bone which I have dignified by the name of key. I call it a key because there are certain locking principles involved in its use that make it more than a pin or a peg, but under no circumstances should it be considered a graft, as its growth is neither expected nor desired. The factors that endow it with distinctive qualities and exclusive achievement are its relative shape and its obvious purpose together with the detail of its employment. First, it is square, thus presenting four surfaces, and four sharp angles that cut into the circumference at four separate points, which affords a locking principle and reduces the risk of splitting to a minimum. Experience has taught that a key should square the diameter of the circular opening in which it is intended to engage. For example, if the diameter of the circle is three-eighths inch it should engage a key three eighths inch square. A key of such dimension will cut the circumference of the circle one-sixteenth inch at each of its four angles. This phase insures against rotation and contributes security to the position of the key. Secondly, the key is made to taper, thereby acquiring the properties of a wedge. I have never seen published any report that embodied the same principles or the same technic or the same results that I have obtained. The method is to be recommended because it shortens the period of confinement and disability at least 50 per cent. It relieves the patients of the heavy burdens with which they are encumbered when the external methods of immobilization are relied on. Their position while in bed can be altered at will and proper hygiene is much more easily accomplished. The local circulation and nutrition in the leg is so little interfered with that on recovery the patient can at once resume the muscular control of his injured limb. There need be no fear of shortening by overlapping

The danger of infection can be dismissed as a serious obstacle because the commonly accepted standards of modern asepsis render infection remote, and should it occur the process of bony union is not gravely interfered with. The non-touch technic is not considered essential and was not used in our work. My cases total thirty-three in which there was no mortality attributable to the operation. Complete union was finally obtained in four cases of suppuration, all of which are explained. One compound fracture had existed three months before operation, prompt union occurred and a useful leg was obtained. Three gunshot fractures united promptly. In two cases, operation had been previously performed. In fifteen cases of nonunion, other methods had failed. The period of nonunion ranged from four weeks to three years and ten months. There were three cases of accidental complications, one due to faulty technic, one to an uncontrollable patient and one to the traumatic hazard of football. A case of only four weeks' duration was classed as nonunion because at the end of that time there was overlapping and suppurative necrosis of the fragments and no evidence of callus formation.

#### Surgical Fusion of Tuberculous Hips in Children

DR O L MILLER, Charlotte, N C This paper is based on experience with forty-five patients, twenty-seven boys and eighteen girls. The average age of the patients was 7 years, the youngest patient was 3 years of age. In six cases, refusal was required, owing to absorption of the graft. One death occurred the day of operation, presumably from pulmonary embolus. Meningitis was not a complication in any case. Opening a tuberculous hip seems to attenuate the lesion, much like opening the abdomen in tuberculous peritonitis. The blood supply about the hip is increased and local resistance evidently stimulated. Two hips found to be tuberculous at biopsy fused spontaneously when operation had to be postponed because of other complications. This is an observation and not proposed as a method of treatment. I have seen no cases of unopened hip joints, apparently definitely tuberculous, fuse spontaneously. Quite a number have been observed for a long period with this in mind. One child in this series, believed for a time to have a healed hip with motion, eventually returned with active hip joint disease and now, following operation, has a well fused hip without pain or apparent active disease. Operation has been carried out in various stages of advancement of the disease and destruction in the hip joint. When there is great destruction of the joint elements and extensive bone and soft tissue infiltration, the hazard of obtaining a strong bone graft is increased. Aside from one surgical death in a Negro boy, there have been no apparent untoward results so far from the operation as practiced. Children have been dismissed from the hospital earlier and with more certainty of their future well being. They have been observed over quite a period of time, have appeared to be clinically well, and have thrived without interruption or the necessity of constant readmission to the hospital. Experience leads me to feel that surgical fusion of the hip has proved a valuable adjunct to the clinical and economic management of tuberculosis.

#### Effect of Roentgen Rays on Bone Regeneration

DRS BARNEY BROOKS and HARRY T HILLSTROM, Nashville, Tenn Young rabbits were used in most of the experiments. In a few experiments dogs, guinea-pigs, rats and mice were used. No important difference was observed in the results obtained. In each group of experiments, one or more litters of young rabbits were used. As far as possible, each litter was cared for in such a manner that each rabbit of a litter was subjected to the same environment except for the age at exposure and the amount of irradiation. The factors constituting the standard dose, subsequently referred to as 100 per cent skin erythema dose were as follows: 180,000 to 200,000 volts, 20 to 30 milliamperes, 60 cm. target-skin distance, 0.5 mm copper combined with 10 mm aluminum filters, and forty-five minutes' exposure. The exposed fields varied from 1 by 2 cm to 1 by 5 cm. Either the right tibia or the right ulna and radius was exposed. The remainder of the animal's body was carefully protected with sheet lead. After exposure the animals were cared for on a suburban farm. At regular intervals varying from one to twenty-eight days, roentgenograms were made of both the exposed and the nonexposed extremities. In each instance the extremity was placed as near the film as

possible and the x-ray tube at a distance of 7 feet from the film. Measurements in growth in length of the bones were made from the roentgenograms. In experiments designed for histologic study, the exposed and nonexposed bones were removed, fixed in solution of formaldehyde, decalcified, sectioned, and stained with hematoxylin and eosin. A comparison of growth curves in both normal and irradiated bones in all experiments shows conclusively that the inhibitory effect of the roentgen ray on bone growth is a change in rate of growth and not a change in duration of growth. No instance of complete cessation of growth in the irradiated bone before complete cessation of growth in the corresponding normal bone has been observed. The effect of a certain amount of irradiation on the growth in length during any period is about the same regardless of the time before this period at which the exposure occurred. Not only is this important from its clinical application, but it may have important significance in the consideration of the possible mechanism by which irradiation inhibits growth of bones. If the capacity for growth of a bone lies within the bone, it must be assumed to be determined by some component of the bone which, for purposes of discussion, may further be assumed to be the cells of the epiphyseal cartilage. Present knowledge of the vital characteristics of a cell is not sufficient for a discussion of the possibilities of producing in the cell changes that would be constantly reproduced in successive cell generations. Furthermore, it would seem as if a difference in the vulnerability of cells were evident from the histologic appearances of tissues that have been exposed to the roentgen ray. Some of the cells at least show no evidences of abnormality, and others are obviously disintegrated. Instead, therefore, of assuming that cells in the act of division are more susceptible to the destructive influence of the roentgen ray, we are assuming that cells with a capacity for rapid division are more susceptible than those with a capacity for slower division.

#### Recurrent Ectopic Pregnancy

DR ALFRED R JONES, Roanoke, Va. Three cases of repeated tubal pregnancy are reported. The percentage of normal pregnancies following a tubal pregnancy is much greater than the percentage of repeated tubal pregnancies. The opinion is expressed that, in the absence of gross disease of the uninvolved tube, it should not be removed.

#### Chorio-Epithelioma

DR WILLIAM T BLACK, Memphis, Tenn. A uterine hemorrhage, or a blood-tinged discharge following pregnancy (especially a hydatidiform mole), with a positive Aschheim-Zondek test, should arouse suspicion of a chorio-epithelioma. While 45.7 per cent of chorio-epitheliomas follow moles, only about 1 per cent of moles are followed by chorio-epithelioma, therefore, a hysterectomy or radium in large doses is not justifiable in young women with moles. The diagnosis of typical cases of chorio-carcinoma from the histologic evidence and clinical symptoms should not be difficult. A panhysterectomy should be performed when a diagnosis is made, which should be followed by irradiation. As embryonic cells are very sensitive to radium rays, radium is a good prophylactic and curative agent in chorio-epithelioma in selected cases. Repeated Aschheim-Zondek tests following moles and especially following hysterectomy for chorio-epithelioma are of paramount prognostic importance. Patients with mole pregnancies should be watched for several months. However, if an Aschheim-Zondek test is negative, one may feel reasonably assured of no further trouble.

#### Hysterectomy

DR F WEBB GRIFFITH, Asheville, N C. In order to determine the results of hysterectomy in the hands of an average surgeon in an average hospital, I have reviewed 700 consecutive abdominal hysterectomies, exclusive of those done for carcinoma of the cervix. As I performed all these operations, they have a more or less uniformity for comparison. I shall not discuss vaginal hysterectomy. I hope and believe that the present indications for hysterectomy will be met to a great extent by some other yet unknown but less radical measures. Radium is the treatment *par excellence* for carcinoma of the cervix, while surgery is just as strongly indicated in carcinoma of the body of the uterus. The mortality following hysterectomy

in the different clinics varies from less than 1 per cent up to practically 9 per cent. The mortality in this series of 700 hysterectomies was 2.15 per cent. Certainly, therefore, double that mortality, or 4.37 per cent, should be the upper limit in any reputable hospital. The greatest conservatism should be practiced in dealing with the ovaries in the non-inflammatory groups, but in the cases of pelvic inflammatory disease one is justified in being more radical. The healthy outdoor life of the woman in the country is an important factor, tending to lessen the severity of the artificial menopause.

#### Presidential Address Surgery and Its Relation to Society

DR R S CATHCART, Charleston, S C. Surgery is affected by the constantly changing social order. With every change there are always some professional men alarmed at the possible dangers confronting the fundamentals of the practice of medicine. The attitude of society toward the surgeon and the attitude of the surgeon toward society is crystallizing in a new form, and many members of the profession are seriously thoughtful over certain phases of the situation. While the course of medicine has suffered setbacks in the past and may suffer them again, the fact remains that advancement has been made and the belief is that it will continue to be made. We may be assured that ultimately the greatest good to the greatest number will result, even though it is not outside the realm of possibility for a period of chaos to intervene. The manner in which the social relations of medicine evolve is largely within the guidance of the profession. Should it pursue with arrogance a course that ignores the public interest and demands the preservation of present conditions, without doubt the control of medical matters will be taken from the profession. On the other hand, if it pursues with humility a course that will develop the best interests of humanity, it is certain that the fundamentals of scientific and ethical medicine will be preserved and the profession will be allowed to govern its growth. The main danger seems to come from ignoring public interest in medical matters, and from a desire by the public for change in the practice of medicine. Just how strong these sentiments may be is not clear, but the rumblings are heard. The socialization of medicine or of state medicine are phrases that are interpreted according to individual interests. To condemn and attack all forms of socialized medicine is poor policy. It is flinging a challenge to the trend of the times and that challenge will certainly be accepted. Already a measure of state medicine exists. It is our duty to direct it in the right channels. Any form of state medicine, including hospitals, should be entirely out of politics. It will be difficult to secure the best surgical service for people at large if such service is selected by political preferment rather than professional competence. Appointments of this kind will be obliged to have a deleterious effect on surgery. It will be difficult to maintain standards if the present trend of state medicine is followed. Scientific research is necessary for the progress of medicine, and the incentive for such work is generally lacking in medicine under governmental control. The younger men should encourage the development of this field.

#### Acute Suppurative Cholangitis

DR FRANK BOLAND, Atlanta, Ga. A Negro, aged 35, entered the Grady Hospital, March 27, 1932, complaining of pain in the abdomen, sweats and chilly sensations. His pulse was 104, respiration 22, and temperature 103.6 F. Three days before admission, while "heading" a bale of cotton, he felt a sudden pain in the region of the umbilicus. His suffering for half an hour was intense, but the pain was felt only intermittently when he entered the hospital. During the preceding five weeks the patient had experienced several attacks similar to this one, but less severe. No history of previous illness could be obtained, except that for several months he had noticed a hard lump on the right side of the rectum, which proved to be an unhealed fistulous tract, with considerable discharge. He was apparently very sick. The eyes were deeply jaundiced. The abdomen was distended, rigid in the upper half, and slightly tender. The liver was moderately increased in size. April 11, a roentgenogram of the abdomen with a barium sulphate enema showed only a dilated colon. Typhoid, malaria and other fevers were ruled out by the laboratory, and there was no response to quinine therapy. Amebas could not be demonstrated. One



blood culture was positive for staphylococci. The icterus index was 37.5. The blood Wassermann reaction was negative. The patient's blood counts were normal for the first two weeks he was in the hospital, after which the leukocytes rose to 11,000, with polymorphonuclears 84 per cent. The temperature ran a septic course, varying from 98 to 103.6 F, and the pulse from 70 to 130. Operation, April 15, under gas anesthesia, showed a jaundiced peritoneum. There was no free fluid, and tubercles were not present. The liver was of normal color and was indurated in the right lobe, as usually seen in abscess. This indurated area was aspirated in six or eight places with a needle of large caliber, but no pus was obtained. The head of the pancreas was swollen and hard. Several enlarged glands were felt in the portal fissure. The distended gallbladder contained normal looking bile and no stones. The mucous membrane seemed healthy, but a culture taken at this time later grew short-chain streptococci. Cholecystostomy was done. The common duct appeared to be normal. There was no evidence of disease in the spleen or appendix. The anal fistula was opened and packed. Five days later it became necessary to perform suprapubic cystostomy for urinary retention probably due to urethral stricture. The patient died nine days after the abdominal operation. Autopsy showed a liver weighing 1,900 Gm. All the biliary ducts were enlarged, and dissection found them filled with greenish, purulent exudate throughout, even into the smallest terminal branches. The gallbladder showed no inflammation nor leakage from around the cholecystostomy tube. There was an abscess in the head of the pancreas, and the pancreatic ducts were filled with pus. Smears demonstrated no amebas but numerous streptococci and staphylococci. A few small stones were discovered in some of the branches of the hepatic duct. The anatomic postmortem diagnosis was suppurative cholangitis and pancreatitis.

#### Chronic Abscess of Liver

DR. K. H. AYNESWORTH, Waco, Texas. There are reported three cases of chronic liver abscess ranging from five to twelve years in duration. None of the patients were known to have suffered from any diarrheal ailments. One patient, after several weeks of drainage, had *Ameba histolytica* in the discharge from the wound. The others had only the common organisms of infection. Every patient had suffered from chronic ill health with periods of apparent freedom from disease, but at no time was any one in normal health. One patient died from blood stream infection after the abscess of the liver had healed, one patient had a secondary subdiaphragmatic abscess which healed after drainage. All patients had a simple drainage operation.

#### Abscess of the Liver

DR. HERBERT B. GESSNER, New Orleans. This paper reviews about 100 cases of abscess of the liver recorded in the New Orleans Charity Hospital between the years 1916 and 1932. Ninety-six cases were verified, fifty-eight of the patients were discharged and thirty-eight died, a mortality of 39.58 per cent. A comparison on the basis of parasites found was made. Counting as amebic the cases in which smear and culture were negative with those in which the pus or the feces showed amebas, a total of fifty-six cases was arrived at with nineteen deaths, a mortality rate of 33.9 per cent. The cases showing staphylococcus, streptococcus or *Bacillus coli* infection gave a mortality rate of 37.9 per cent. Cases noted as presenting large abscesses showed twenty-six recoveries and fourteen deaths, a mortality of 35 per cent, a little below the general rate of 39.58 per cent. Some little comfort was derived from the comparative mortality in white persons and Negroes, the former showing a 30.1 per cent rate, the latter 51.1 per cent, probably as a result of greater delay in seeking treatment. In the series of ninety-six cases, 55.2 of the patients were white and 44.8 per cent Negroes. Examining other phases of the records it was found that two cases gave a history of trauma, thirty-three out of ninety-six gave a history of diarrhea of importance recent or old. Six showed jaundice on admission. In forty-seven cases (72 per cent) the roentgen examination showed a high right leaf of the diaphragm while in eighteen (25 per cent) this diagnostic aid was absent. In sixty cases (62 per cent) there was a definite leukocytosis in fifteen (25 per cent) no leukocytosis. One patient reported ten years spent in the tropics, two were steamship firemen, one of whom reported a stay in the tropics while another very likely had

been similarly exposed. Aside from these cases, occupation and residence had no perceptible influence. Three were recurrent cases, a previous operation having shown abscess of the liver. The relative proportion of male and female patients was 92.8 per cent males, 7.2 per cent females. Three patients had involvement of the right pleural cavity, one with bronchohepatic fistula, a fifth came in with hemoptysis. Of these five, four died, a mortality rate of 80 per cent. The thirty-eight fatal cases yielded twelve autopsies. In five cases multiple abscesses were found, in two cases free blood was found in the abdomen (200 and 1,500 cc, respectively), in three there was pneumonia and in two there was nothing noteworthy besides the single abscess. In one of the three pneumonia cases there was perforation into the colon. No case presented cerebral or splenic abscess.

#### Surgical Treatment of Trigeminal Neuralgia

DR. ADRIAN S. TAYLOR, Birmingham, Ala. The radical operation has been so systematized that it has become relatively simple. I have done the subtotal section of the sensory root in Birmingham thirty-seven times without a death, and with permanent cure in all cases. One patient had a return of pain and it was necessary to cut additional fibers eighteen months later. The re-exposure was easy, no trouble was experienced from hemorrhage, the uncut fibers were easily identified, and permanent relief followed their section. In two patients there was a temporary weakness of the external rectus. In one there was a complete facial palsy beginning the seventh day after operation and gradually becoming complete. The explanation of this paralysis of the seventh nerve lies in the possibility of trauma transmitted from the gasserian ganglion through the great superficial petrosal nerve to the ganglion of the knee of the seventh. At this point this nerve lies in a bony canal, and slight trauma might cause sufficient edema of the nerve to cause its interruption in its bony canal. In this particular case, power in the orbicularis was lost and a colleague, Dr. Frank Clements, kindly did a partial tarsorrhaphy to protect the exposed cornea. In this procedure, temporary synechiae were formed between the edges of the upper and lower lids. Full power returned within a year, the lids were separated, and the patient has remained well without any injury to the eye. Trichlorethylene is now being used as treatment by inhalation. It has a selective action on the sensory part of this nerve. From twenty to thirty drops three times a day are inhaled from a handkerchief by the patient while reclining. Relief may be afforded in a few days. If it is not experienced in four or five weeks, the treatment is discontinued. Palliative neurectomies or alcohol injections affording temporary relief may be wise. Radical operation is safer than alcoholic injection of the ganglion.

#### Primary Tuberculosis of Spleen

DR. H. R. SHANDS, Jackson, Miss. In the past two years I have operated in three cases of primary tuberculosis of the spleen in which a correct preoperative diagnosis was made. I believe it fairly certain that by means of a roentgenogram of the splenic area a correct diagnosis may be made in the vast majority of cases of chronic primary tuberculosis of the spleen.

#### Hemolytic Jaundice Five Splenectomies in One Family

DR. WALTER D. WISE, Baltimore. Six cases of chronic congenital hemolytic jaundice with splenectomy are reported. Five cases were definitely familial and in one family. Four patients were quite ill, one case was complicated by nephritis and severe gout, one by pyelitis and one by marked optic atrophy. One of the two adults had gallstones, two had accessory spleens. After operation one had pneumonia and lung abscess, two had mild postoperative wound infections, one having numerous skin infections about the face, another about the fingers. All patients were promptly relieved of jaundice, all except one had prompt improvement of anemia and his ultimate improvement was satisfactory, in none of the re-examined patients did the fragility of the red cells become normal. There was no operative or hospital mortality. One patient with nephritis and gout died some months later of cerebral hemorrhage and uremia. Five patients are living and in good health five years, two years and ten months, two and a half years, two years and two months and nine months after operation. Bone changes have been slight. The optic nerve involvement in one case is the only one so far reported.



### Selective Collapse in Treatment of Tuberculosis

DR FRANK S JOHNS, Richmond, Va A review of 100 cases in which operation was performed for pulmonary tuberculosis, in all of which some form of thoracoplasty was done, shows interesting results in the most recent group, in each of which only a limited selective collapse operation was done. I have followed this small series of cases closely. The results have been better with these than with other patients who had the complete or standard thoracoplasty. The selective operation has proved definitely less hazardous. The majority of these cases were completed in one stage and the number of days in the surgical division were correspondingly reduced. The thirty-three patients of this series have had only the upper five to seven ribs resected, the length of the section removed depending on the size of the cavity. In every apical case, large sections of the first rib should be resected, for in these selective cases the first rib is literally the key to the situation. It has been well described as "the keystone of the thoracic dome." For a few of the cases, the first and second ribs have been removed entirely. The size of the cavity and its location are the governing factors in my choice of procedure. A patient who has an apical cavity with a sound lower lobe should have the cavity in the apex obliterated, but the good lower lobe should not be handicapped by the compression resulting from a complete thoracoplasty. I firmly believe that the cavity should be closed, even if it requires multiple stages of operation. In several cases I have found it necessary to do an anterior resection of the ribs in addition to the posterior operation. The collapse of the cavity is essential to the cure of the patient. Great benefit is derived by selective groups of patients with pulmonary tuberculosis from the operations on the phrenic nerve. When surgery of the phrenic nerve was indicated, alcohol injections, crushing of the nerve and phrenicectomy have given surprisingly good results. In a small percentage of cases these results were so satisfactory that no further selective collapse operation was indicated. I now advocate and practice the importance of allowing this less extensive and safe operation on the phrenic nerve to prove its utmost usefulness before I proceed with a thoracoplasty. I have abandoned my former plan of doing this operation as merely a preliminary or index to a more radical procedure. It has earned a place of its own and should be accorded plenty of time after the operation to effect its maximum results. I urge a more intensive surgical treatment of patients with pulmonary tuberculosis. Pneumothorax is the recognized primary collapse treatment of choice. Selective extrapleural thoracoplasty ranks second in my hands. Phrenicectomy is third, with its varied procedure and application.

### Arachnidism

DR LLOYD NOLAND, Birmingham, Ala Latrodectus mactans is perhaps the only really poisonous spider in the United States. This spider is shiny, coal black and usually brilliantly marked in red or yellow or both, the most constant being an hour-glass-shaped bright red marking on the ventral surface of the abdomen. The female, the one responsible for the bites, may attain a half inch in length, with a leg spread of as much as two inches. The "black widow," so called because of its custom of eating its mate, is usually found alone. It builds a coarse web in dark or dimly lighted places, the seats of outdoor toilets seeming to be frequently favored but instances are increasing of its invasion of habitations, garages, automobiles, and even of beds in which persons are sleeping. This spider is seemingly fearless, instantly attacking anything coming near it. In the eight year period 1924-1932 twenty-nine patients with arachnidism have been admitted to the Employees' Hospital at Fairfield, Ala. In twenty of these patients the bite was received on the genitals, in nine on other parts of the body, such as the leg, finger, hand and knee. In seventeen cases the bite was received in an outdoor privy, other bites were received variously, such as in a garage, in an automobile, two in bed, two in the field, and two in houses. In every case the symptoms have presented a most dramatic picture of which the following is an instance. J T, a Negro, aged 43, was admitted with a diagnosis of acute intra-abdominal lesion, probably perforating ulcer. The history was as follows. About 3 a m the patient, as a result of a large dose of epsom salt, found it necessary to go to an outdoor toilet, where he thought that something bit him on the scrotum. About five or ten minutes

later he began to have very severe pain in the right thigh. The pain progressed, to involve the lumbosacral region, the hips, the entire abdomen and the right chest. The patient was admitted to the hospital about three hours following the beginning of the attack. He had been given a hypodermic of one-sixth grain (11 mg) of morphine about one hour before admission. The picture was one of intense agony, the patient complaining of terrific pain in the abdomen and back, the hips and both thighs. The abdomen presented an intense boardlike rigidity. The temperature was 98 F, the pulse 90. The urine showed a trace of albumin. The leukocyte count was 8,000, the blood pressure 140 systolic, 90 diastolic. The pain was so intense that the statements of the patient were decidedly incoherent. A bite could not be discovered. About two hours after admission the temperature rose to 100 F, descending to normal in about six hours and remaining normal for the following twenty-four hours. On the third day the temperature again rose to 100 F but subsided within a few hours. The patient was given four doses of one-sixth grain of morphine over a period of about six hours before any relief was obtained. His complaint of intense agony was continuous, and it was difficult to keep him in bed. The abdominal pain was markedly paroxysmal. There was no vomiting at any time. The patient gradually improved and at the end of seventy-two hours had entirely recovered, except for some muscular soreness. I believe that a picture such as the one presented, closely simulating the intense, agonizing pain frequently encountered in perforated gastric or duodenal ulcers, can easily lead to serious mistakes in diagnosis and to the performance of abdominal exploration. Differentiation should be comparatively easy in most instances if one is informed and familiar with spider poisoning and considers the intense cramplike pains practically always encountered in the extremities and the back, as well as a history of possible spider bite, and not infrequently is able to locate a small punctate indurated area at a point at which the bite was received. None of the patients in this series have been operated on and all have recovered in periods varying from twenty-four to seventy-two hours. The leukocyte count has varied from a high of 26,000 to a low of 6,000, with an average of 11,000.

### Acute Extradural Abscess with Compression of Cord

DR GEORGE H BUNCE, Columbus, Ga Acute extradural abscess is not as rare as has been supposed. Accumulating experience proves that it is a recognizable clinical entity. The only effective treatment is laminectomy with dependent drainage of the abscess. Cases without complication, if operation is performed early, show less mortality than has hitherto been reported.

### The Endocrine Influence in Prostatic Hypertrophy

DR WILLIAM E LOWER, Cleveland Having demonstrated experimentally and clinically the effect of putting the interstitial cells of the testicles out of commission, I have tried methods other than castration for accomplishing the same results. I have shown experimentally that the results of castration can be obtained by ischemia, that is, by depriving the testicle of its main blood supply. I decided to try this clinically. The main artery to the testicle is the internal spermatic, a branch of the aorta, which is given off just below the renal vessels. The other arteries supplying the testicle are the external spermatic, a branch of the inferior epigastric, and the deferential, which follows the vas closely. In a limited number of clinical cases I have tried this procedure and a marked diminution in the size of the prostate has been noticed. The series, however, is too small to permit any conclusions to be drawn. I believe that in the rather large, soft glands a very definite reduction in the size of the gland may be expected from reducing the blood supply to the testes and thereby controlling the endocrine influence. In doing herniorrhaphies for direct inguinal hernias, I have repeatedly divided this entire cord and atrophy of the testicle on that side followed in course of time, but in no instance was there sloughing. I decided to try this procedure clinically in cases of prostatic enlargement. In a limited number of cases, I have divided the entire cord. In two instances sloughing followed, and I had to remove one testicle in one case and both in another. Since then I have divided only the internal spermatic and deferential arteries with the vas. No sloughing has followed.

# Current Medical Literature

## AMERICAN

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Titles marked with an asterisk (\*) are abstracted below

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- Acute Intestinal Intoxication Associated with Mastoiditis in Infants. M. Morris and W B Smith San Francisco.—p. 964
- Suppurative Pleuritis in Children Its Pathogenesis, Diagnosis and Treatment. H Neuhoof and S Hirschfeld New York.—p. 973
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**Leukocytic Response to Measles**—Benjamin and Ward present the results of a study of the leukocytic reactions in forty six patients with measles, including observations on twenty patients during the incubation period. They employed the supravital technic in making the counts, and in their analysis they used a table of normal values for each of the white cell elements during the different ages of childhood. During the incubation period of measles, variations in the numbers of leukocytes were relatively slight. On the first day of the prodromal stage the leukocytic picture underwent a striking alteration manifested principally by a fall in the number of lymphocytes. At the height of the disease, all of the cell elements contribute to the production of leukopenia. Histologic changes observed in lymph nodes obtained from one of the patients indicated that the development of the lymphopenia in measles is coincident with marked hyperplasia of the lymphoid tissues. Nevertheless, the young lymphocytes in the glands did not appear in great numbers in the blood stream until the beginning of convalescence. The authors direct attention to the possibility that the blood picture may be suggestive of measles at a time when fever is the only apparent clinical abnormality.

**Sore Throat Due to Streptococcus Epidemicus**—Pilot and Rosenblum made a bacteriologic study of the infections of the throat in children during the winter and spring of 1931, from January to May. They found that 9 of 102 children with sore throat yielded *Streptococcus epidemicus*, 50 others yielded ordinary hemolytic streptococci. The sore throat due to *S. epidemicus* was sporadic and not related to the supply of milk. The clinical picture of the patients with tonsillitis due to *S. epidemicus* was similar at the onset to that of the patients with ordinary hemolytic streptococcus infections, but complications and sequelae were more common in the former. The greater frequency of complications may be due to the capsules and the mucoid character of *S. epidemicus*, properties that have been associated with added virulence and aggressiveness.

**Antitoxin Content of Blood**—Messeloff and Karsh titrated the blood of fifty-one children with negative reactions to the Schick test for the antitoxin content. Forty-eight or 94 per cent had at least  $\frac{1}{30}$  unit of antitoxin in each cubic centimeter of blood serum. In one case the value was between  $\frac{1}{30}$  and  $\frac{1}{100}$ , and in two other cases, between  $\frac{1}{30}$  and  $\frac{1}{50}$  unit per cubic centimeter of serum. In no instance did they find a child with a negative reaction to the Schick test with no antitoxin in the blood. They believe that reported discrepancies such as finding persons with negative reactions to the Schick test with little or no antitoxin in the blood can in all probability be ascribed to the use of a toxin of questionable potency.

A standardized, potent toxin is essential for obtaining consistently correct results. Occasionally, a reaction to the Schick test will be positive within from twenty-four to forty-eight hours but will become negative thereafter. This type of reaction is found in persons having less than the usual  $\frac{1}{30}$  unit of antitoxin per cubic centimeter of serum. From the point of view of immunity to diphtheria, such persons are of no practical importance, since they possess an efficient barrier against the development of clinical diphtheria. They conclude that the Schick test, correctly performed, is a practical and reliable indicator of the presence of diphtheria antitoxin in the blood in an amount sufficient to protect the individual against clinical diphtheria.

**Histamine Test of Gastric Secretion**—Siemsen presents the results of extragastric reactions with varying doses of histamine in three subjects, and the results of fractional gastric analysis and the results of single aspiration tests in twenty children. From a study of the results the author concludes that the gastric response to histamine varies with the size of the dose. For comparative results, similar doses must be employed. The optimal dosage for children apparently lies between 0.005 and 0.01 mg per kilogram. Fractional analysis by the histamine method is feasible and practicable in childhood. The single aspiration test is distinctly advantageous for practical clinical purposes.

**Ocular Torticollis**—Levin reviews the literature and reports the histories of six patients with ocular torticollis to emphasize its importance in pediatric medicine. Recognition of the possible relationship of torticollis to ocular defects will spare children unnecessary operations, prolonged immobilization and other orthopedic measures. Correction of the ocular defect is at the same time the cure of the torticollis. When ocular torticollis is allowed to go uncorrected, the patient ultimately learns to ignore the image of the paralyzed eye and binocular single vision is lost, unocular vision remaining, with amblyopia of the involved eye. Prolonged tilting of the head finally results in changes in the cervical musculature and spine, and asymmetry of the face and even of the skull. Treatment should be carried out by a competent ophthalmologist. The usual procedure is to produce a defect in motility in the sound eye which is similar to the defect in the paralyzed eye, so that equilibrium may be restored in the two eyes. This is effected by a backward insertion of the associate muscle of the sound eye (in paralysis of the superior oblique, operation on the inferior rectus of the nonparalyzed eye). This procedure results in the corresponding meridians of the retinas of the eyes becoming parallel again, with disappearance of vertical diplopia. Proper refraction is essential. Orthopedic measures and corrective exercises should be employed, when it is deemed necessary, following treatment of the eyes.

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- Health of the People in a Year of Depression L I Dublin New York.—p. 1123
- Relapsing Fever in California G S Porter, M Dorothy Beck and L M Stevens San Francisco.—p. 1136
- \*Oysters and Anemia E J Coulson H Levine and R E Remington, Charleston S C.—p. 1141
- Child Hygiene J F Rogers Washington D C.—p. 1147
- \*Ten Year Study of Toxin Antitoxin Mixture and Schick Test in Control of Institutional Diphtheria. C C Young and G D Cummings, Lansing Mich.—p. 1151
- Infection of Cows with *Brucella Abortus* Variety of *Brucella* from Public Health Standpoint. Harriet Leslie Wilcox New York.—p. 1157
- Accurate Method of Reading the Kahn Reaction. K. C Read Jr Fort Smith Ark.—p. 1177

**Oysters and Anemia**—In their report on oysters in anemia, Coulson and his associates show that the oyster is excelled only by liver in the amounts of iron and copper which it may furnish to the diet in an average serving. That these metals are easily available for hemoglobin production has been shown in previous work in which it was found that oysters, oyster ash (acid soluble) and a solution of iron, copper and manganese in the same quantities, fed to anemic rats, brought about hemoglobin regeneration at the same rate in all three cases. Oysters should therefore be efficacious in the treatment or prevention of those types of secondary anemia which respond to treatment with iron or iron and copper. There is increasing support for the view that dietary deficiencies can best be corrected by proper selection of foods rather than by the use of artificial concen-

trates or medicinal mixtures. In order to insure an adequate supply of the inorganic constituents for hemoglobin production it would seem a wise plan to include oysters in the diet of the pernicious anemia patient, in conjunction with liver extract, since it is known that liver extract is relatively low in iron. An average serving of oysters (110 Gm) would furnish about 2 per cent of the human calory requirement (3,000 calories) and yield about 41 per cent of the daily dietary standard for iron, stated by Sherman to be about 15 mg.

**Toxin-Antitoxin and Schick Test**—The results of a Schick survey of the resident population at the Michigan Home and Training School at Lapeer are presented by Young and Cummings for 1920 for periods ranging from 1895 to 1920. The survey included 1,006 members of the 1920 population resident for eleven years thereafter, and the population of the institution in 1928 and 1931. The 1920 population was 151 per cent positive and the 1,006 patients of the same population, resident during the eleven years thereafter, were 15 per cent positive in 1920, 1 per cent positive in 1921 after treatment with toxin-antitoxin mixture, and 15.3 per cent positive in 1931. True or subclinical diphtheria was present as an influence on immunity before 1920 and was absent thereafter. The Schick tests done on the 1,006 patients resident at the time of the 1920 survey and during eleven years thereafter indicate that the span of artificially produced immunity runs close to seven years and that both artificially produced negatives and natural negatives tend to become positive over a given period of time.

### Annals of Medical History, New York

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- Robert Koch (1843-1910). G. B. Webb, Colorado Springs, Colo.—p. 509.  
Koch's Views on Stability of Species Among Bacteria. T. Smith, Princeton, N. J.—p. 524.  
Reception of Koch's Discovery in United States. H. R. M. Landis, Philadelphia.—p. 531.  
William Shippen, Junior. W. S. Middleton, Madison, Wis.—p. 538.  
Some Incidents of Medical Interest in the Life of General Lafayette J. Friedenwald and S. Morrison, Baltimore.—p. 550.  
Caligula, or History's Debt to Syphilis. C. S. Butler, Brooklyn.—p. 560.  
Psychiatry in Historical Retrospect. F. M. Harrison, Brookline, Mass.—p. 565.  
The Life and Times of Dr. William Harvey. W. Herringham, Hampstead, England.—p. 575.

### Archives of Internal Medicine, Chicago

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- Specific Dynamic Action of Protein in Patients with Pituitary Disease. M. N. Fulton and H. Cushing, Boston.—p. 649.  
\*Effect of Digitalis on Coronary Flow. N. C. Gilbert and G. K. Fenn, Chicago.—p. 668.  
Relation of Sugar to Cholesterol in Blood. H. O. Mosenthal, New York.—p. 684.  
\*Congestive Heart Failure. XVII. Mechanism of Dyspnea on Exertion. T. R. Harrison, W. G. Harrison, J. A. Calhoun and J. P. Marsh, Nashville, Tenn.—p. 690.  
\*Liver Function in Hyperthyroidism. S. S. Lichtman, New York.—p. 721.  
\*Branch Arborization and Complete Heart Block. S. R. Rosenthal, Chicago.—p. 730.  
Stenosis of Superior Vena Cava Due to Mediastinal Tuberculosis. G. Milles, Chicago.—p. 759.  
Combined Actions of Quinidine and Digitalis on Heart. Experimental Study. H. Gold, W. Modell and L. Price, New York.—p. 766.

**Effect of Digitalis on Coronary Flow**—In a series of experiments on dogs, Gilbert and Fenn found that digitalis has an effect that decreases the coronary flow. This decrease was observed under conditions of pulse rate and blood pressure that would normally tend to increase the volume of coronary flow. There was a decrease in coronary flow in part of the cases in which the blood pressure and the pulse rate fell. They do not expect such a vasoconstrictor action to be present in all experimental cases or in all clinical cases. Such an action is not to the biologic advantage of the animal, and it is offset by some protective reflex mechanism. Green and others have stressed the ease with which vasodilator effects may be obtained by nerve stimulation and the difficulty with which vasoconstrictor effects on the coronary arteries are obtained. Angina pectoris includes a large group of cases in which it is probable that vasoconstriction of the coronary arteries occurs as a result of reflexes originating in various sources. Such a reflex vasoconstriction is not to the advantage of the patient and does not occur with a normally acting autonomic system but in persons whose autonomic systems show lowered thresholds and are overlabile. It is in such a group that one would expect a vasoconstrictor action from digitalis to occur on the coronary

arteries most readily. In a large series of clinical cases, as in a large series of experimental animals, digitalis in comparable doses showed a wide divergence of action. The different physiologic effects did not always appear in the normal sequence or with the same percentage of the lethal dose, or the one or the other action may not appear at all. The physiologic effect is probably not a simple function but is conditioned by a great many anatomic and biochemical factors with which the authors are not as yet familiar. The coronary flow is also a function of many variable factors, and the effect of one isolated factor cannot be predicted. While a vasoconstrictor action cannot be predicted in any case, there is enough evidence of the presence of such an action to warrant a great deal of caution in the use of digitalis in coronary disease.

**Congestive Heart Failure**—Harrison and his associates draw the following conclusions from their observations concerning the mechanism of the production, in persons with cardiac disease, of dyspnea on mild exertion. 1. A decrease in vital capacity is important in two respects alone: it lowers the respiratory reserve and thereby predisposes to dyspnea, and it increases the resting ventilation through vagal reflexes from the lungs and hence lowers the respiratory reserve still further. 2. Afferent impulses from the moving muscles are a factor in the production of dyspnea because they cause reflex increase of the ventilation during the exertion. 3. Reflex stimulation of respiration, because of increased pressure in the right side of the heart and in the cardiac ends of the great veins, is of especial importance. (1) In some cases, venous pressure is higher than normal at rest and this increases the resting ventilation, (2) venous pressure rises more than normally during exertion and hence the patient with cardiac disease has greater than normal ventilation during exertion, and (3) the venous pressure, in contrast to its behavior in normal subjects, remains elevated after exertion, and therefore the ventilation in patients with cardiac disease also remains elevated longer than normal after the cessation of exercise. 4. All these factors so operate as to increase the value of the quotient ventilation divided by vital capacity, which is a measure of subjective respiratory distress in persons with cardiac disease. 5. These data constitute additional evidence against the validity of the widely accepted but erroneous theory that the symptoms of cardiac failure are essentially and primarily due to a diminution in the minute output of the heart.

**Liver Function in Hyperthyroidism**—Lichtman demonstrated a disturbance in the oxidation of cinchophen in sixteen of twenty cases of uncomplicated hyperthyroidism. Thirteen of the cases showed an increased excretion of oxycinchophen in the urine up to 150 mg daily. Larger amounts, between 150 and 200 mg, or from 31 to 42 per cent of the standard test dose, were excreted in the remaining three cases. On the basis of his previous experience, he believes that this indicates moderate impairment of the capacity of the liver cell to oxidize this substance further. In no instance was severe impairment of the hepatic function noted. There was no apparent relationship between the degree of functional impairment of the liver and the basal metabolic rate, the known duration of the disease or the percentage of weight lost. The constancy of depletion of glycogen in the liver cells in animals that have been fed thyroid substance and probably in clinical thyrotoxicosis suggests that the disturbance in oxidation of cinchophen is related to the capacity of the cells to store and mobilize glycogen. The galactose tolerance test gave no indication of a disturbance of hepatic function. There was little evidence of appreciable disturbance of the excretory functions of the liver as determined by studies on the icterus index, bilirubinemia, urobilinuria and urobilinogenuria.

**Branch Arborization and Heart Block**—Rosenthal reviews the literature and presents the various processes producing heart block in five patients. He states that arborization block alone cannot be considered as a distinct entity and when present is associated with an interruption of one or both of the main branches of the bundle. Coronary sclerosis with infarction of the interventricular septum or chronic myocarditis with marked scarring may produce arborization block. Acute inflammations will not produce an arborization block, because the destruction of the arborizations is probably not complete. Acute or subacute myocarditis may lead to heart block by invasion of the atrioventricular node, the bundle of His or its branches. The author found endocarditic lesions in two cases.

of myocarditis reported by him, one being microscopic and the other focal and small. Because of the cases reported in the literature as myocarditis of unknown origin, in which few or no microscopic studies were made, he suggests that the endocarditic lesions may have been microscopic and overlooked. In a case of essential hypertension with heart block, the mechanism by which the degenerative changes took place in the bundle of His is explained by an increased tonicity of the small arteries and the arterioles and prestasis and stasis in the precapillaries and capillaries.

### California and Western Medicine, San Francisco

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- Pharmacology of Bismuth Compounds in Treatment of Syphilis. A Summary. P. J. Hanzlik, San Francisco.—p. 289  
Pulmonary Tuberculosis: Its Dietary Treatment. A Controlled Clinical Investigation. E. Bogen and W. Rachmel Olive View.—p. 292  
Rupture of Ureter: Medicolegal Problem. Report of Cases. M. B. Wesson, San Francisco.—p. 296  
Gallbladder Surgery. A. Weeks and G. D. Delprat, San Francisco.—p. 303  
Malignancy: A Group Problem. J. D. Lawson, Woodland.—p. 307

**Rupture of Ureter.**—Wesson found, in an experimental study of kidneys and ureters removed *en masse* with the bladder, obtained at necropsy, that the wall of a normal ureter cannot be punctured by a catheter, and it is doubtful whether a diseased ureter can be perforated unless a deep ulcer is present. The technic he used was first to fill the bladder with water, introduce the cystoscope and catheterize the ureters. The catheters used ranged in size from number 5 probe point to number 11 Blasucci. The injections were made with a 13.5 per cent solution of sodium iodide, and 10-inch gravity pressure overinjected in some cases. Syringe injections were used in an attempt to produce tears by pressure. In all cases, after the tip of the catheter had encountered resistance in the kidney or obstructions in the ureter, and force was used, the catheters buckled in the bladder. The bladders were then opened and the tissue adjacent to the ureteral orifices firmly clamped with artery forceps, the catheters were held close so that they could not bend outside of the ureter, and the author attempted to perforate the ureter or kidney, using all the force available in his fingers. By means of pins on a board, sharp hooks were made in the ureters and complete occlusion of the ureters was obtained by means of string, or by tying the ureter itself into a tight knot. Again, several catheters were passed into a ureter in order to encourage the presentation of a tip against the wall at an unusual angle. After the tip was caught, there was no further advance of the point no matter how great the amount of pressure used. Artificial strictures in the ureters and stiff catheters resulted in damaged tips or ureteral coils. On three occasions sharp tipped catheters were forced through the kidney parenchyma, but the capsule could not be pierced. Syringe pressure injection of sodium iodide solution, followed by air, brought about partial decapsulation, but there was no rupture. In one case a tight knot was tied in the ureter, the sides of the meatus were seized with clamps and a number 5 bougie was introduced with such force as to break the bougie up but the ureter held. A number 11 bougie was then tried. It was so large that it could not bend, two assistants with four artery clamps held the mouth of the ureter and sufficient pressure was used to tear the ureter away from the clamps, but eventually the clamps held and the knot was avulsed. Such force, of course, could not be applied to a living subject, as the bougie would buckle in the bladder. Stones by means of pressure necrosis produce leaks or openings through which the stones fall and the resultant perinephric abscess may drain into the ureter, the intestine or on the external surface.

**Gallbladder Surgery.**—Weeks and Delprat analyze 100 selected cases of gallbladder disease in which they operated. They consider that operations on the gallbladder, whether simple drainage or complete extirpation, with proper consideration of preoperative care and of the time when the patient is operated on, are safe procedures, with low mortality, and that a high percentage of cured and thankful patients may be expected. They conclude that one must be sure that ones operation is in the best possible surgical condition by having recourse to the excellent laboratory facilities which are now available. The rose bengal test can now be used as a routine procedure to make certain that a reasonably normal liver function is present. This knowledge is of especial value in gall-

bladder surgery. The laboratory tests will reveal acute stages of bile tract inflammation, in which surgery is inadvisable. Sugar and fruit juices should be forced before any major operation. The simplest amount of surgery in the shortest space of time, consistent with proper work, should be done. When in doubt the gallbladder should be drained, because the less extensive the surgery the less the risk to the patient. A surprisingly large number of drained gallbladders never require further surgical procedures.

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Drinking Water. E. E. Cornwall, Brooklyn.—p. 357  
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### Military Surgeon, Washington, D. C.

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- Inferiority Complex in Military Service. B. F. Duckwall.—p. 387  
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### Nebraska State Medical Journal, Lincoln

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- \*Peptic Ulcer Syndrome Without Ulcer. A. B. Rivers and Frances R. Vanzant, Rochester, Minn.—p. 465  
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Prognosis in Surgery of Abdomen: Acute Appendix. J. E. Summers, Omaha.—p. 473  
\*Diseases of Thyroid Gland. B. B. Davis, Omaha.—p. 477  
Purpura. A. S. Rubnitz, Omaha.—p. 482  
Hypothyroidism and Neurasthenia. W. J. Arrasmith, Grand Island.—p. 486  
Osteomyelitis of Skull. C. G. Moore, Fremont.—p. 489

**Peptic Ulcer Syndrome Without Ulcer.**—According to Rivers and Vanzant, there seems no doubt that the syndrome usually accepted as diagnostic of peptic ulcer can be produced by factors other than peptic ulcer. The ulcer-like syndrome usually occurs in the nervous, high-strung, intensive person and is particularly likely to be established during periods of fatigue and tension. Because peptic ulcer also is frequently seen in similar cases, because reactivation of the ulcer frequently takes place following a period of stress, fatigue and tension, and because fluctuating psychophysiologic factors seem capable of preventing the cessation of the ulcer syndrome, it is suggested that factors which have their inception in derangement of the nervous system must be significant in the cause and course of the ulcer type of syndrome, whether or not ulcer is present. It is well to remember nervous factors in considering the treatment of patients having ulcer-like syndromes. In certain instances, to relieve the syndrome permanently, it is only necessary to readjust the patient's activities and to advise more rest and relaxation. In cases of peptic ulcer, the remembrance of this factor and the direction of some therapeutic measures toward relief make the symptoms much easier to control and undoubtedly influence the course of the disease favorably.

**Diseases of Thyroid.**—Davis states that the best brief statement of the physiology of the thyroid he has encountered is that of Marine, which is as follows: "The major function of the thyroid is to provide the means through its iodine containing hormone, thyroxine, for maintaining a higher rate of metabolism or oxidation processes than would otherwise exist, and also through fluctuations of activity, it provides the means for varying the rate of metabolism to meet changing physiologic needs." Almost every pathologic change in the thyroid is produced by an urge for more thyroxine. This may be due to an actual or relative iodine deficiency. Hypertrophy and hyperplasia are not due to multiplication of follicles but to the bringing to maturity of a large number of small undeveloped follicles. Every active hyperplasia is marked by the disappearance of colloid within the follicles and a heaping up of new and larger epithelial cells within the follicle. Hyper-